CITY OF CAMPBELL
Community Development Department

May 5, 2021

NOTICE OF SITE AND ARCHITECTURAL REVIEW PERMIT APPLICATION

Notice is hereby given that the Planning Division of the Community Development Department of the City of Campbell has received an application for an Administrative Site and Architectural Review Permit for the following project proposal:

File No.:	**PLN-2021-18**
Applicant:	**Mark Warlick**
Project Address:	**1357 Abbott Avenue**
Property Owner:	**Jhun and Hope Toliao**
Zoning District:	**R-1-9 (Single Family Residential)**
General Plan:	**Low Density Residential (San Tomas Area Neighborhood Plan)**
Neighborhood Association(s):	**San Tomas Area Community Coalition**
Project Description:	**To allow for the construction of an approximately 170 square-foot one-story addition, and 160 square-foot covered patio, to be added to the rear of an existing single-story single-family residence**

This project will be decided by the Community Development Director and you have the opportunity to provide comment prior to the Director's decision. The ten-day comment period for this application begins on May 5, 2021 and ends on May 17, 2021. Any comments regarding this application must be submitted in writing (including email) to the Planning Division before 5:00 p.m. on **May 17, 2021**. The Director will then consider all comments submitted within this time period prior to a decision. No additional notice will be provided. Please contact the project planner in a timely manner to determine what decision was reached.

Decisions by the Community Development Director are final in 10 calendar days following the date of approval, unless an appeal is received in writing at the City of Campbell Community Development Department, 70 N. First Street, Campbell, prior to the end of the appeal period. A written appeal must be accompanied with the required $200 appeal filing fee. City Hall is currently closed to the public however plans and architectural drawings may be viewed on the City's 'Public Notices' web page (http://www.cityofcampbell.com/501/Public-Notices) under 'Administrative Decisions' or by contacting the project planner. Questions or comments regarding this application may be addressed to Stephen Rose, Senior Planner, in the Community Development Department, at (408) 866-2142 or by email stephenr@campbellca.gov.

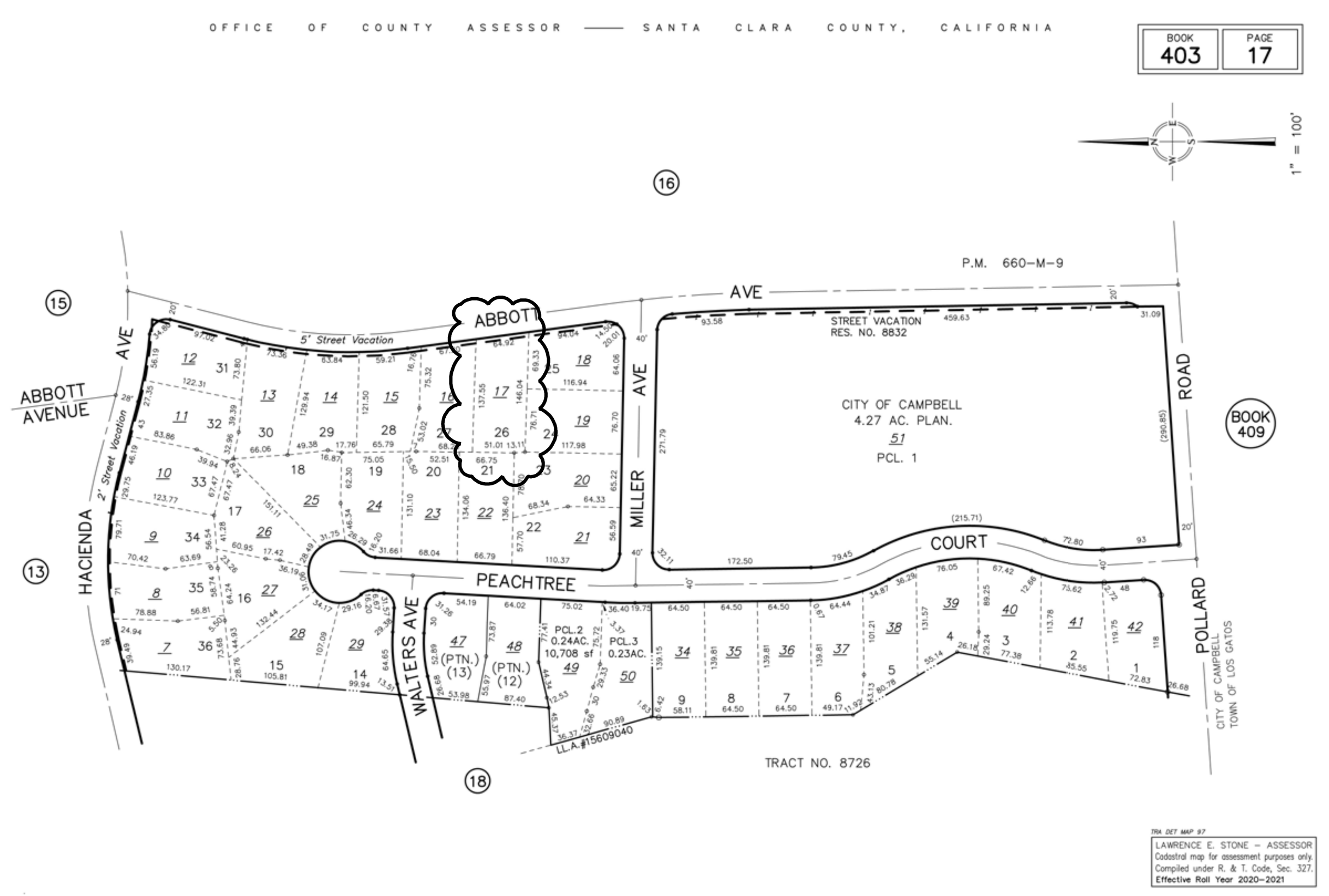
Location Map - 1357 Abbott Ave.

752 0 376 752 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Campbell IT, GIS Services

Scale 1: 4,514

This map is based on GIS Information and reflects the most current information at the time of this printing. The map is intended for reference purposes only and the City and its staff is not responsible for errors.



Vicinity Map

GENERAL ELECTRICAL NOTES:

a. 125-volt, 15 amp and 20 amp receptacle outlets shall be listed tamper-resistant receptacles per CEC 406.11.
b. All branch circuits that supply 120-volt, single phase, 15 amp and 20 amp receptacles outlets in the kitchen, dining room shall be arc-fault circuit interrupter (AFCI) protected per CEC 210.12(B).
c. (2) or more 20 amp small-appliance branch circuits shall be supplied to serve receptacle outlets in the kitchen per CEC Article 210.52(B).
d. All indoor and outdoor lighting to be high efficacy in accordance with Table 150.0-A. e.All outdoor lighting shall be controlled by a manual ON and OFF switch that does not override the automatic actions of either item ii or item iii per section 150(k)(3A)

GENERAL PLUMBING NOTES:

The flow rate of the water closet to be 1.28gpf maximum, lavatory faucets to be 1.2gpm, kitchen faucets to be 1.8gpm, and the shower head to be 1.8gpm

"Per California Civil Code Article 1101.4 and CALGreen Section 301.1, for all building alterations or improvements to a single family residential property, existing plumbing fixtures in the entire house that do not meet current flow rates will need to be upgraded. Water closets with a flow rate in excess of 1.6 gpf will need to be replaced with water closets with a maximum flow rate of 1.28 gpf. Shower heads with a flow rate greater than 2.5 gpm will need to be replaced with a maximum 1.8 gpm shower head. Lavatory and kitchen faucets with a flow rate greater than 2.2 gpm will need to be replaced with a faucet with maximum flow rate of 1.2 gpm (or 1.8 gpm for kitchen faucets). Please note this requirement on the plans."

NOTE: FIELD INSPECT PLUMBING FIXTURES FOR COMPLIANCE AND/OR UPGRADE TO 2019 CODE

MANDATORY

GENERAL NOTES:

—CONTRACTORS SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL UNDER WHICH THEY WILL PERFORM THEIR WORK, AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY WORK.

—IT IS NOT WITHIN THE SCOPE OF THESE DRAWINGS TO SHOW ALL OFFSETS, OBSTRUCTIONS, STRUCTURAL CONDITIONS, OR OTHER EXISTING FACTORS WHICH MAY AFFECT THIS WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS TO INSTALL THEIR WORK IN SUCH MANNER THAT IT WILL CONFORM TO ANY EXISTING CONDITION.

—CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THAT OF ALL OTHER TRADES TO ENSURE THE ORDERLY PROGRESS OF ALL WORK. NO WORK SHALL BE CLOSED IN, PRIOR TO COMPLETION OF WORK BY OTHER TRADES.

—CONTRACTOR TO VERIFY ALL DIMENSIONS & CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION

— ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH STRUCTURAL CALCULATIONS INCLUDING ANY AND ALL AGENDA PREPARED BY:

RC CONSULTING
Romeo Calabar
RC Consulting Engineers
7007 Realm Dr, San Jose, CA 95119
408-229-8155

AND SHALL BE RESPONSIBLE FOR PERFORMING ALL WORKED DESCRIBED THEREIN.

— ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH TITLE 24 ENERGY CALCULATIONS INCLUDING ANY AND ALL AGENDA PREPARED BY:

TITLE 24 DATA CORP
633 MONTEREY TRAIL
POB 2199
FRAZIER PARK, CA. 93225-2199
1-800-237-8824

AND SHALL BE RESPONSIBLE FOR PERFORMING ALL WORKED DESCRIBED THEREIN.

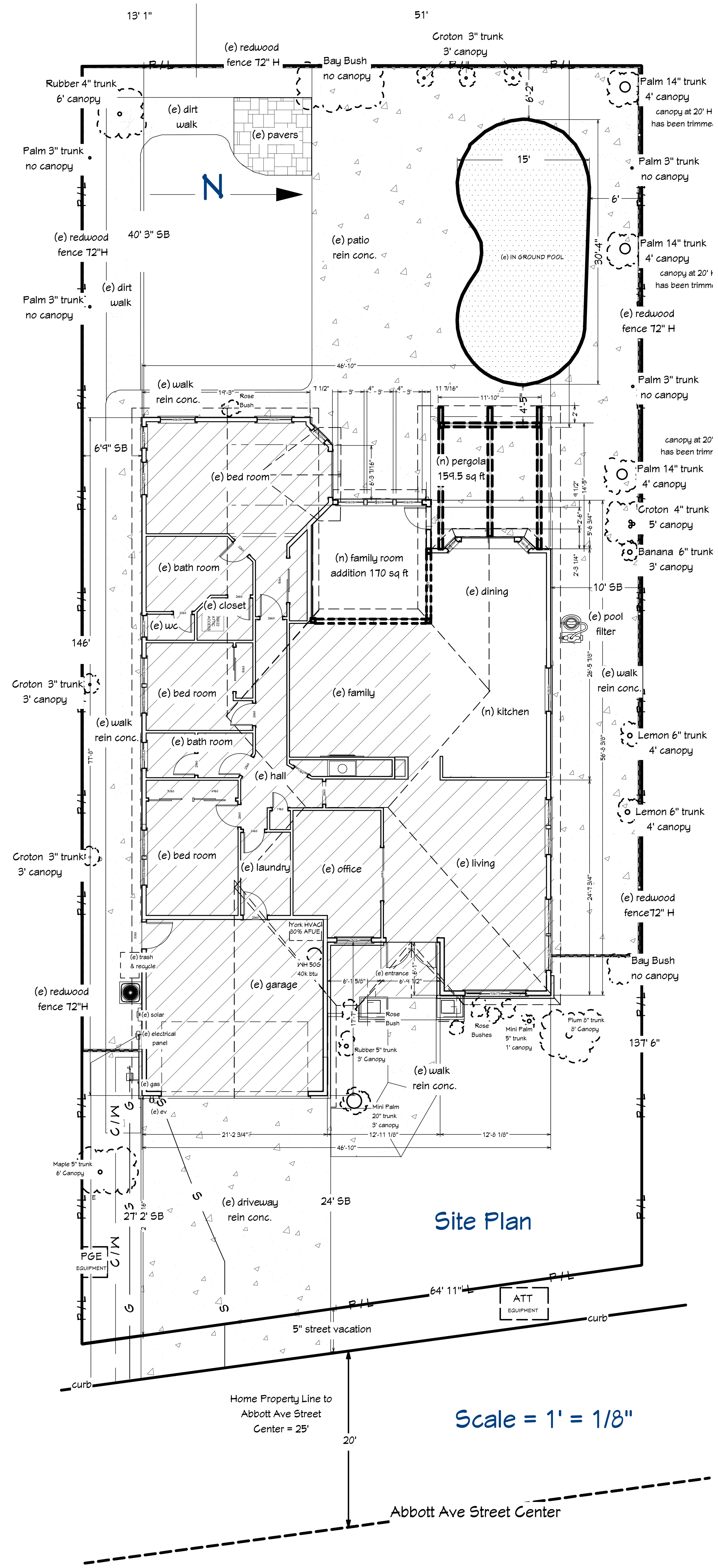
— THE ARCHITECT / DESIGNER WILL BE OBSERVING CONSTRUCTION OF THE PROJECT. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE QUALITY CONTROL AND CONSTRUCTION STANDARDS FOR THE PROJECT UNLESS OTHERWISE NOTED.

Smoke Alarms shall be installed in the following locations: 1. In each sleeping room. 2. Outside each sleeping area in the immediate vicinity of the bedrooms. 3. On each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics.

Carbon Monoxide Alarms shall be installed in the following locations: 1. Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s). 2. On every level of a dwelling unit including basements. 3. Where a fuel -burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

NOTE: FIELD INSPECT SMOKE DETECTORS AND CO2 TO ENSURE WORKING AND/OR UPGRADE TO 2019 CODE

"No product may be used that exceeds California's maximum limits on Volatile Organic Compounds (VOC)"



Site Plan

Scale = 1' = 1/8"

Single Story Kitchen Remodel with Addition

City of Campbell Office Use:

LEGEND / SITE INFORMATION:

(APN): 403-17-017
Zone R1-9
Occupancy Groups: R-3 for residence and U for garage
Type of Construction: VB

Project Data Table:

Lot = 9114 sq ft
Max. Building Coverage: 3189 sq ft (35%)

Single Story Home
Existing Home = 2331 sq ft
Single Story Home
Existing
Front Porch = 60 sq ft
Existing Garage = 430 sq ft
2821 sq ft

Existing Lot Coverage = 31%

New Pergola = 159.5 sq ft
New Addition = 170 sq ft
New Home 3185.5 sq ft

New Lot coverage = 34.95%

Seismic Zone (D2);
Wind Design Speed (100 exposure B)
Soil Bearing Capacity (1500psf min.)
California Climate Zone 4
Average Winter Design Temp. (40-59F)
Average Summer Design Temp. (53-86F)
Termite Level (Heavy)
Floor Load (40/10)
Bedroom Floor Load (30/10)
Roof Load (20/10)

FEMA FLOOD ZONE X
Minimal Flood Hazard

Building Height: 20' 8" highest point (see page A3)
Building Set backs:
Front = 24'
Right = 10'
Left = 6' 9"
Rear = 40' 3"

Addition causes no change to height.
Addition causes no change to set backs.

"The project shall comply with the submitted Waste Management Plan".

PAGE INDEX: **(Index of Drawings)**

SCOPE OF WORK

1. Addition at rear of home, existing Solarium is removed and replaced with an 168 sq ft addition opening existing family room and dining room walls through removing 2 exterior walls and replacing them with engineered beams, posts and footings.
2. Remove an existing window from master bed room to new addition. Remove an existing window at the existing kitchen to create additional cabinet space in new kitchen. Remove 2 existing windows in the existing dining room and replace them with french doors under the existing header.
3. New Pergola Roof - extending existing roof at same height over existing rear patio. Access through new French Doors at #2.
4. Tearout and replace kitchen in the same location.
5. Electrical and lighting upgrades to code and homeowner spec in work area; with arcfault breakers to supply kitchen.

NO TREES WILL BE REMOVED

GENERAL COMMENTS:
Site Management:
No Construction material, equipment, portable toilets, trash containers, or debris shall be placed in the public right-of-way.

A trash container shall be maintained on site at all times and debris on site which could otherwise blow away, shall be regularly collected and placed in container.

All construction debris (wood scraps and other debris, which cannot blow away) shall be piled within the property lines of the project in a neat and safe manner.

"Construction Hours are limited to 8 AM to 5 PM Monday through Friday and 9 AM to 4 PM Saturday. No construction on Sundays and holidays".

All Construction shall conform to the following Codes:
2019 California Building Code CBC
2019 California Plumbing Code CPC
2019 California Mechanical Code CMC
2019 California Electrical Code CEC
2019 California Residential Code CEC
2019 California Energy Code
2019 California Green Building Standards Code
2019 California Fire Code
Campbell Specific Municipal Code

Designer: Ross Rohrer

(APN): 403-17-017

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION
1	3/8/2021	Ross Rohrer	Lot Coverage #s A1 & A3

Site Plan

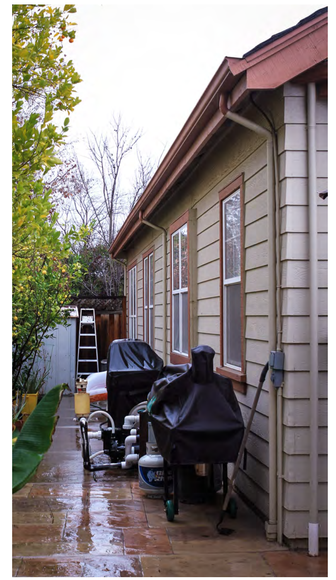
Toliao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

SHEET:
A1



Roof Plan w/ Solar Panels - Site Photos

Designer: Ross Rohrer

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

Roof Plan w/ Solar Panels
- Site Photos

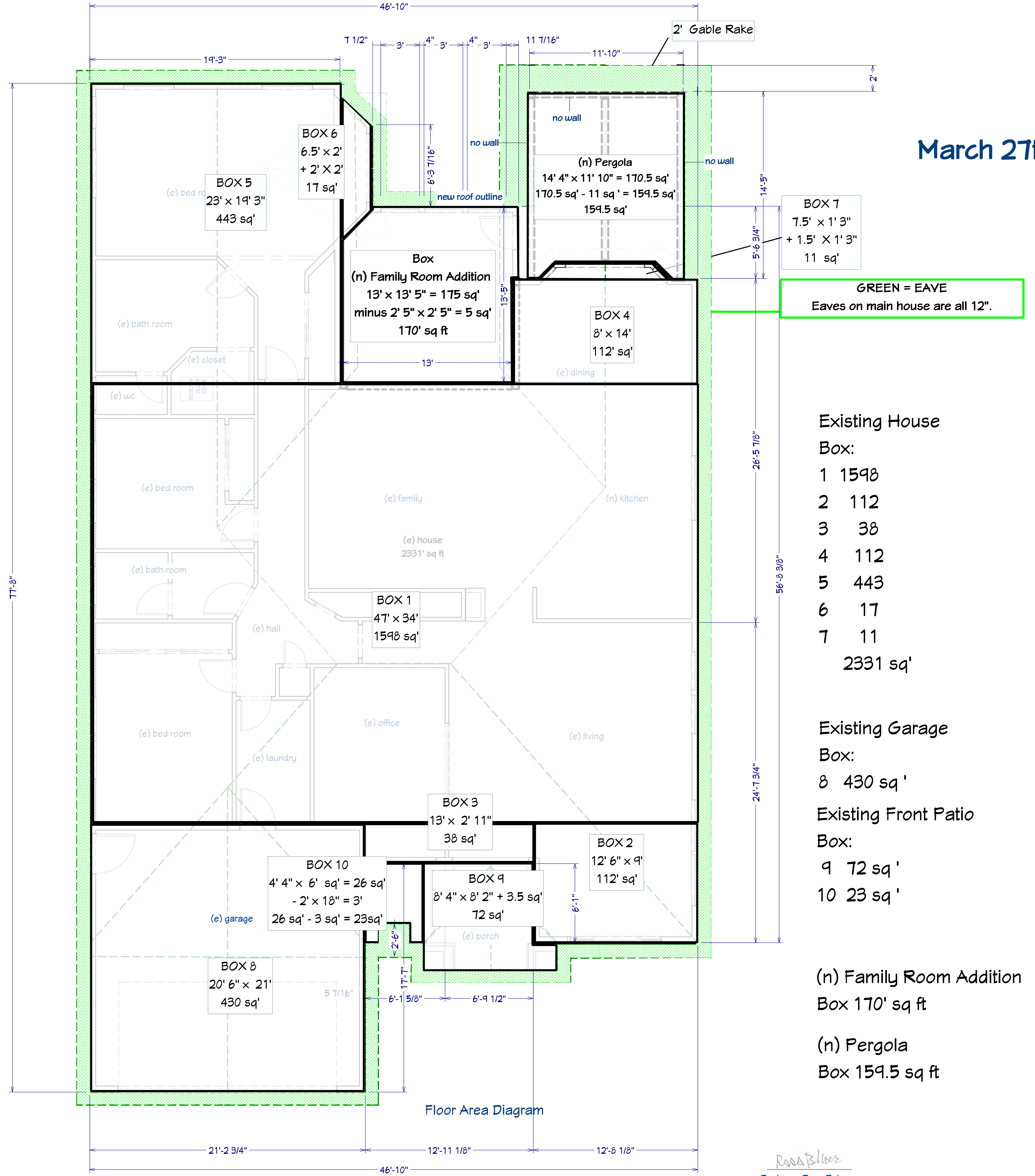
Toliao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

SHEET:
A2



Floor Area Diagram

March 27th 2021

Existing House

Box:

1	1598
2	112
3	38
4	112
5	443
6	17
7	11
	2331 sq'

Existing Garage

Box:

8 430 sq '

Existing Front Patio

Box:

9 72 sq '

10 23 sq '

(n) Family Room Addition

Box 170' sq ft

(n) Pergola

Box 159.5 sq ft

Project Data Table:

Lot = 9114 sq ft

Max. Building Coverage: 3189 sq ft (35%)

Single Story Home

Existing Home = 2331 sq ft

Single Story Home

Existing

Front Porch = 95 sq ft

Existing Garage = 430 sq ft

2856 sq ft

Existing Lot Coverage = 31%

New Pergola = 159.5 sq ft

New Addition = 170 sq ft

New Home 3185.5 sq ft

New Lot coverage = 34.95%

Scale = 1' = 1/4"

Ross Rohrer

Designer: Ross Rohrer

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION
1	3/8/2021	Ross Rohrer	

Floor Area Diagram V3

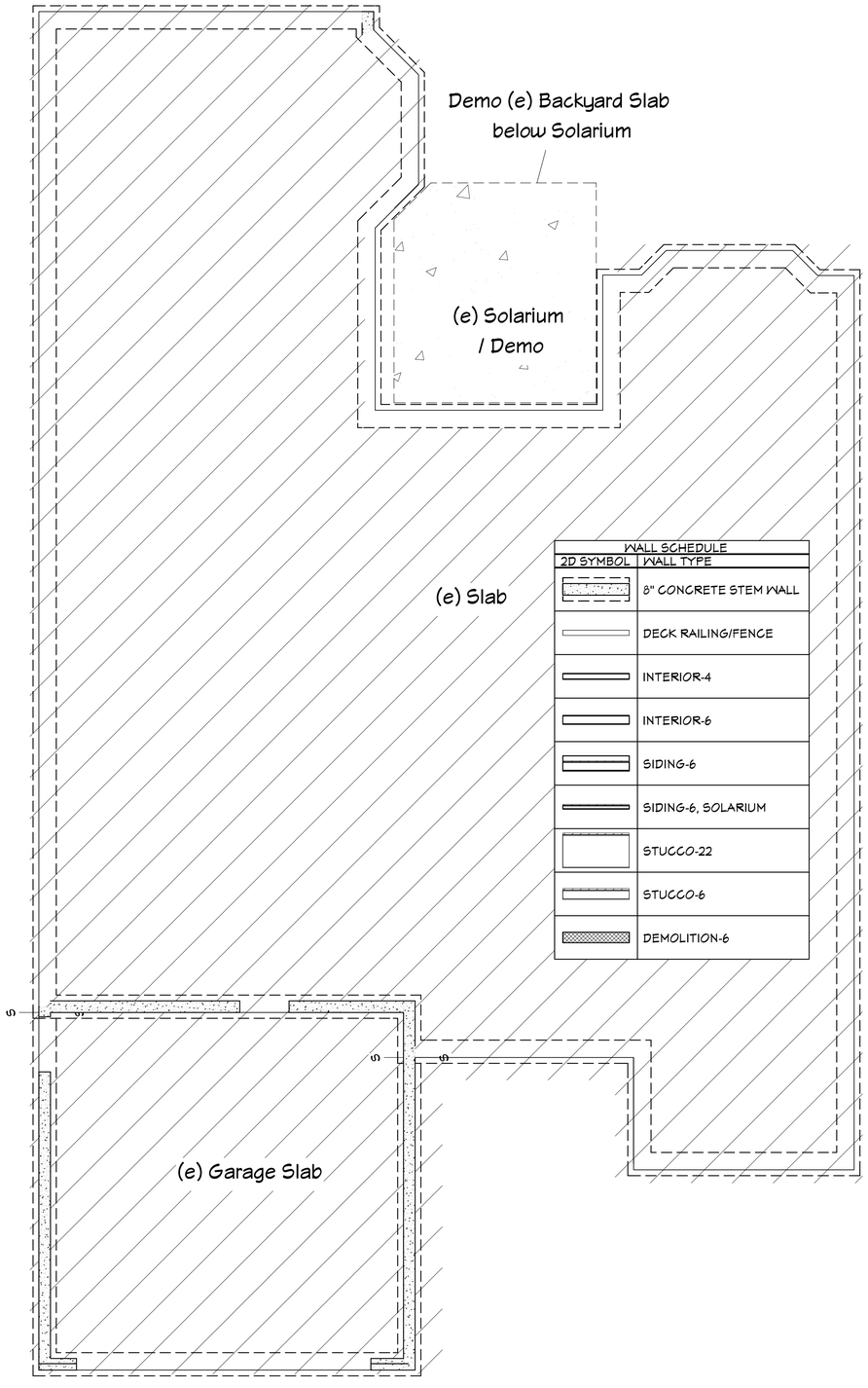
Toliao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

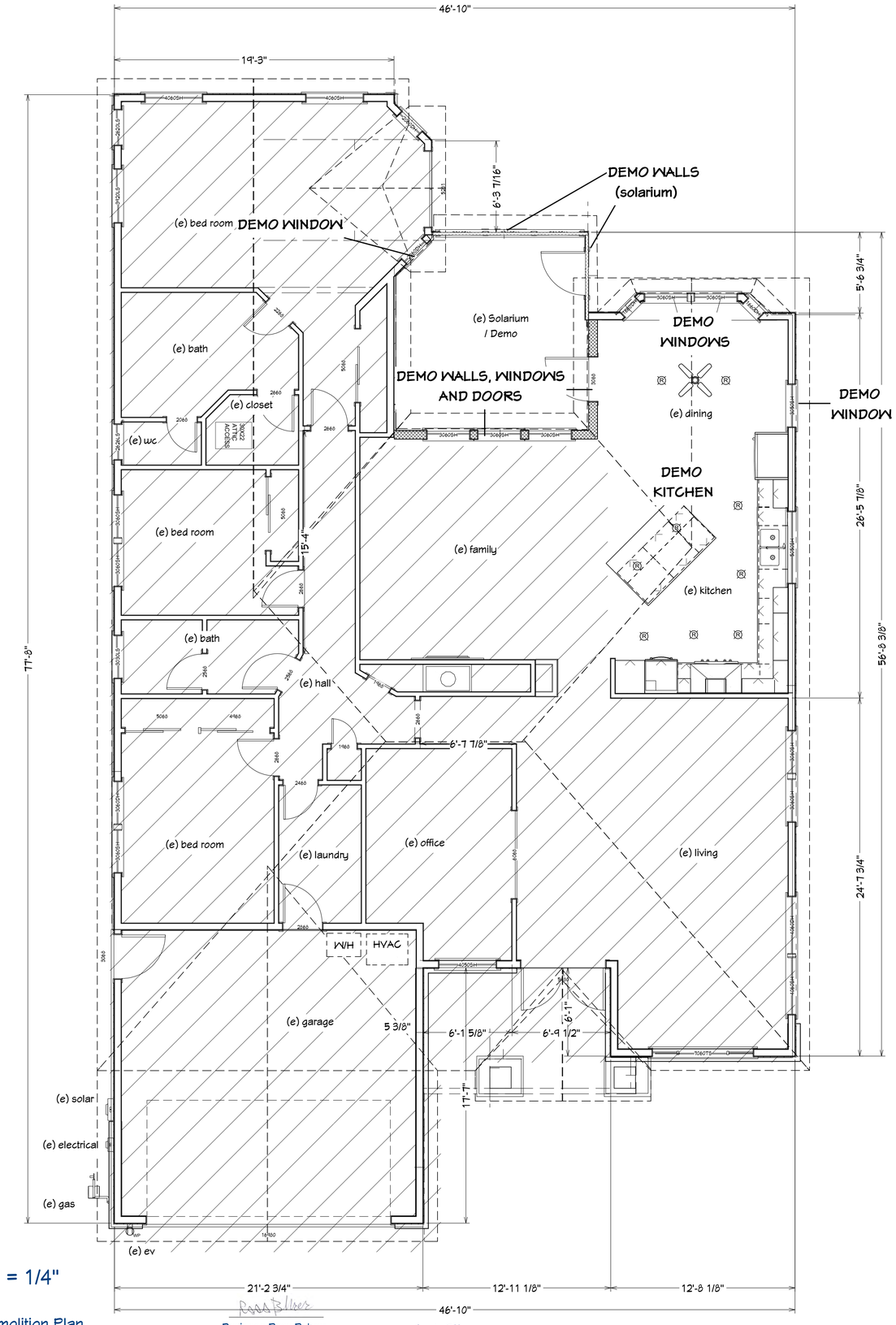
DATE: 4/11/2021

SCALE:

SHEET: A3



Foundation



SCALE: 1' = 1/4"

As Built with Demolition Plan

Designer: Ross Rohrer

1st Floor

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

As Built
with Demolition Plan

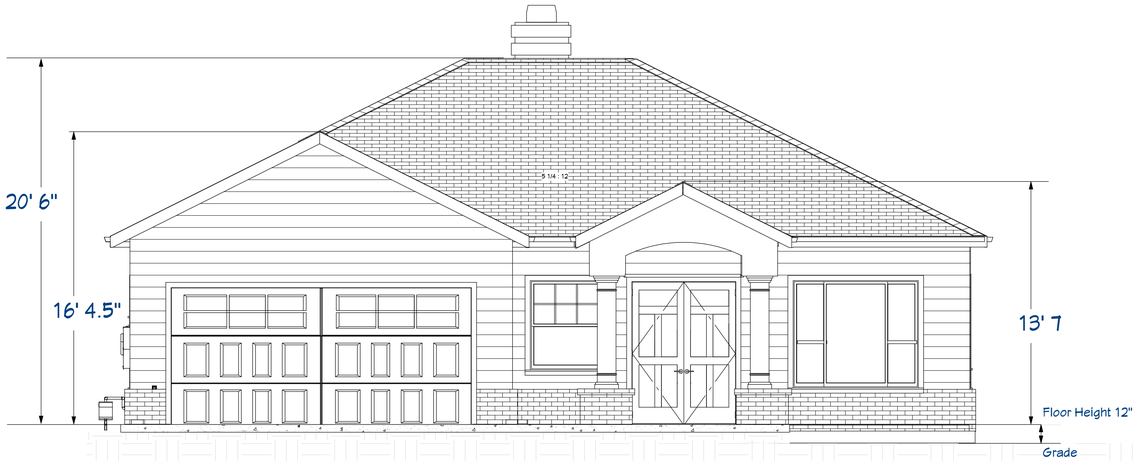
Tollao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

SHEET:
A4



West Elevation

East Elevation

South Elevation

North Elevation

SCALE: 1' = 1/4"

Designer: Ross Rohrer

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

As Built Elevations with Demolition Plan

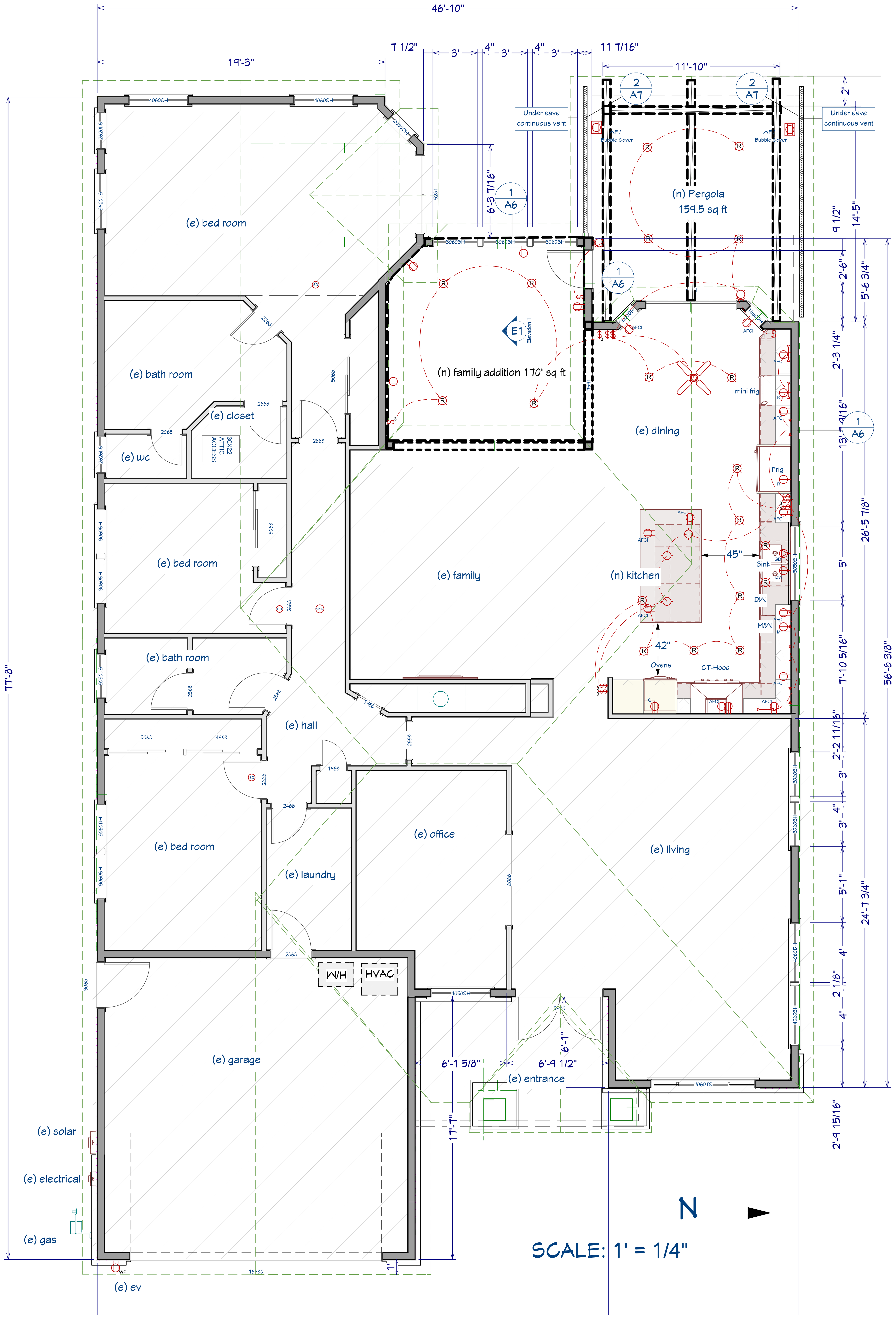
Tollao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

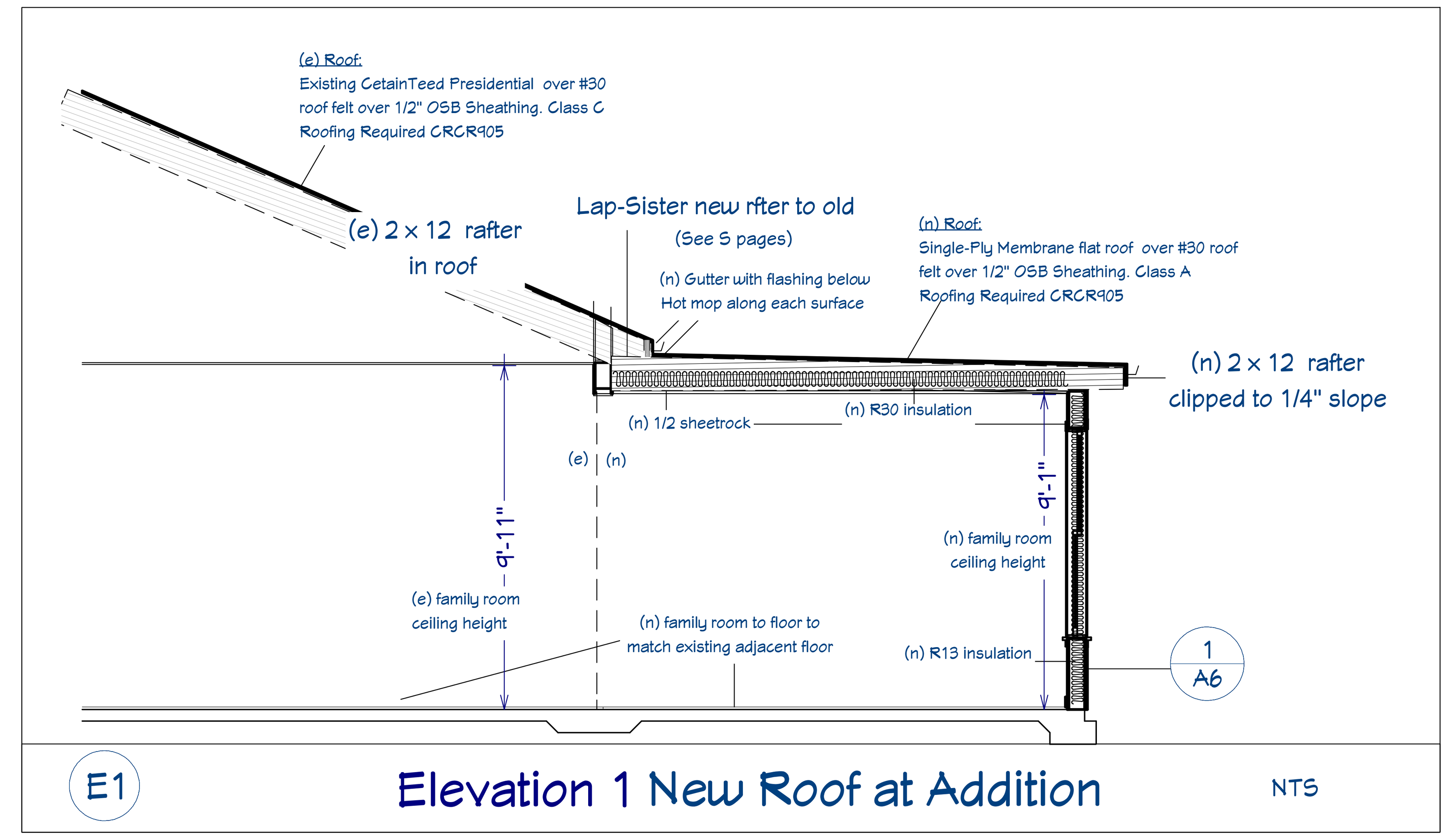
SHEET:
A5



SCALE: 1' = 1/4"

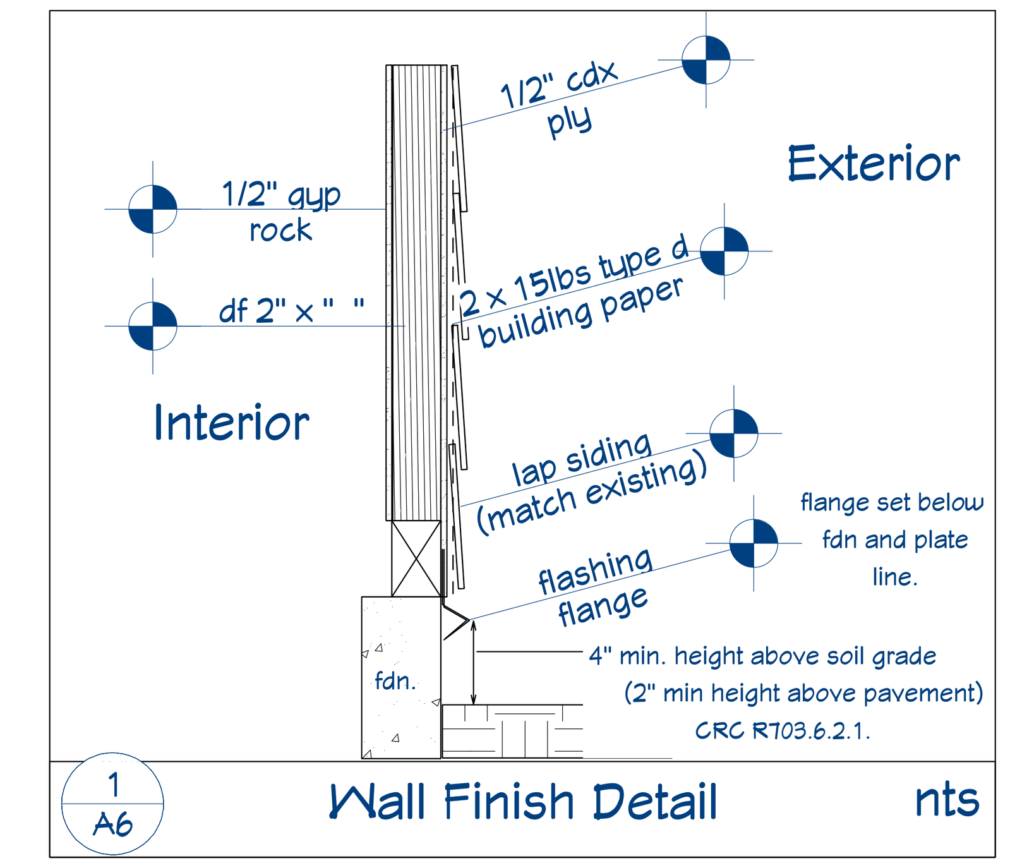
N →

Single Story - Slab Foundation with 170 sq ft Addition and Kitchen Remodel



E1 Elevation 1 New Roof at Addition

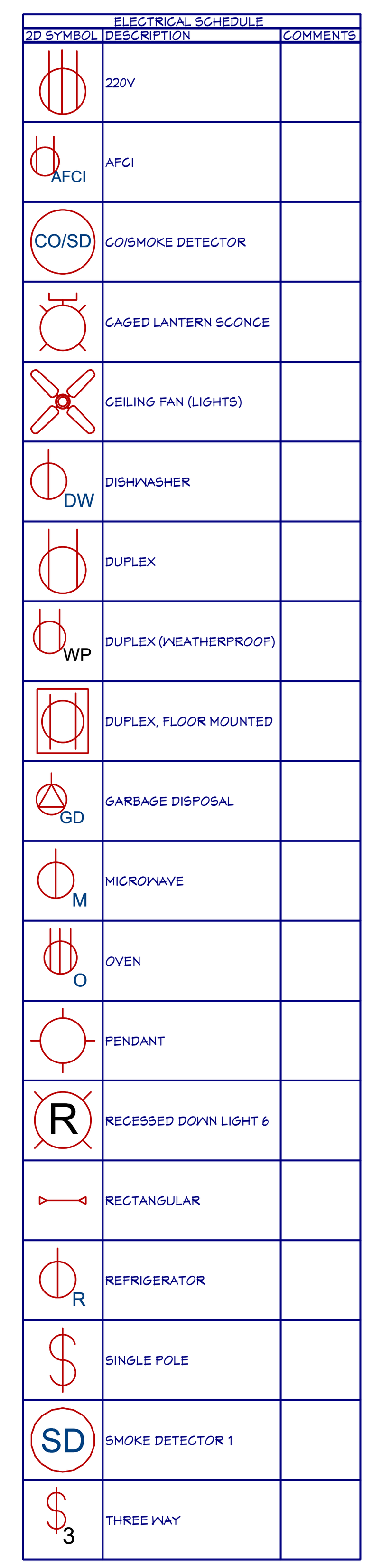
NTS



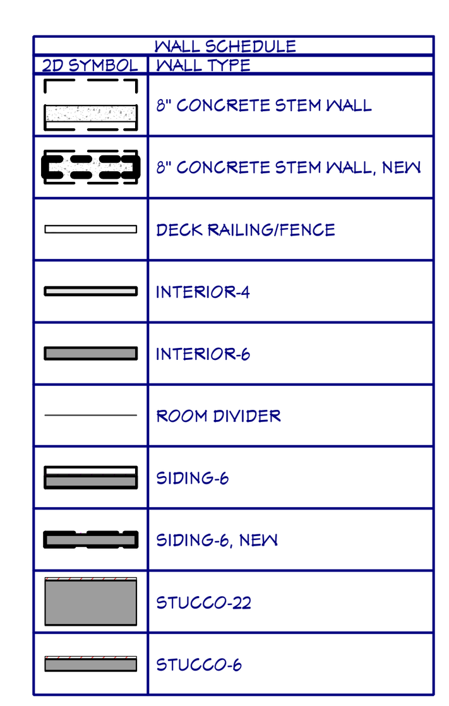
Wall Finish Detail

nts

1. Lot is flat, no grading is necessary beyond standard slab foundation.
2. New Construction to match existing construction materials and dimensions,



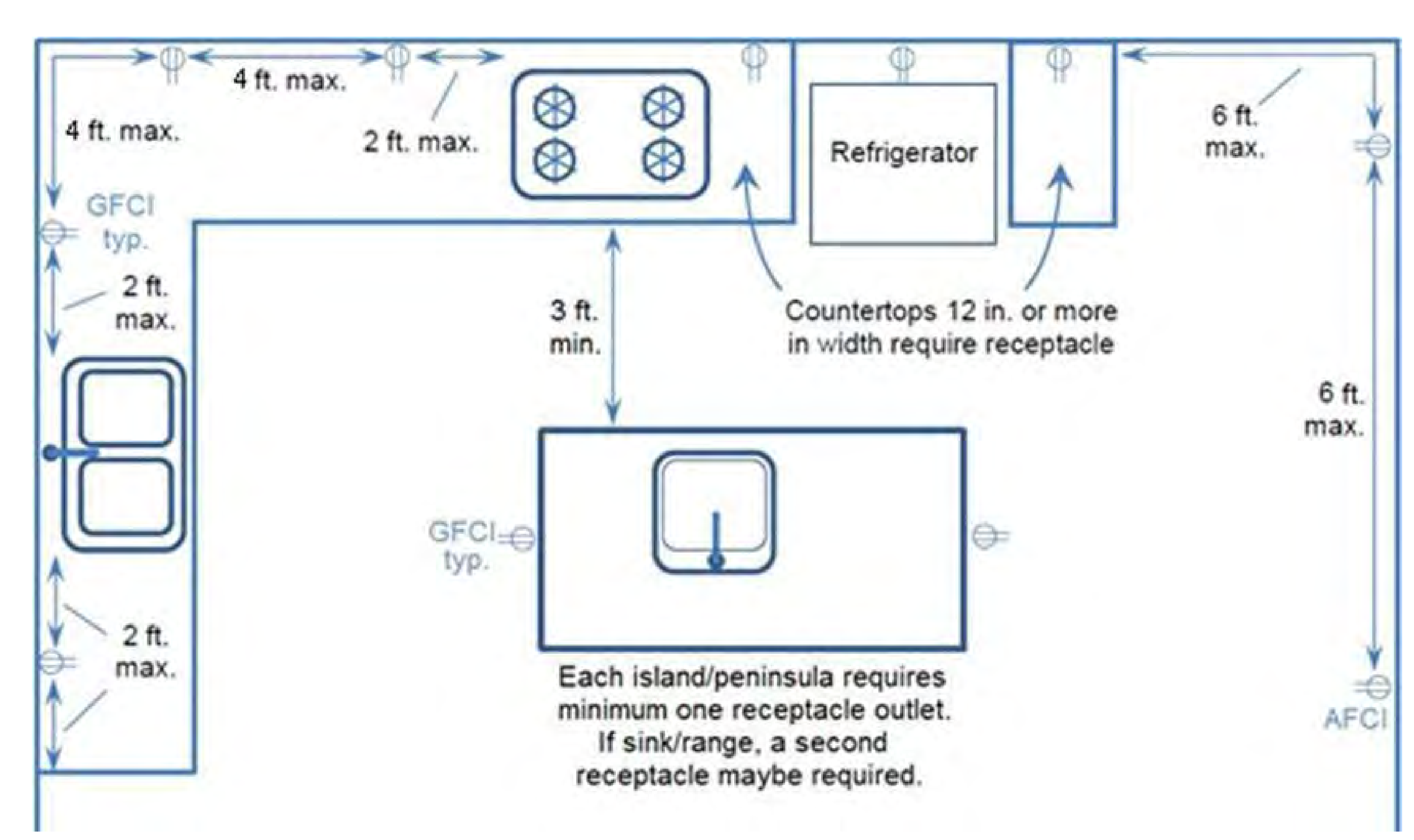
Electrical Legend



Wall Legend

Kitchen Remodel Requirements

-General requirements based on the 2019 California Codes & San Jose Municipal Code.
-Minimum two (2) 20 amp dedicated circuits for counter receptacles (CEC 210.11(C)(1) & 210.52(B)(3)).
-No equipment, such as dishwashers, garbage disposals, or exhaust fans, shall be connected to the two 20 amp counter circuits (CEC 422.16).
-A receptacle outlet shall be installed at each wall countertop space that is 12' or wider. Receptacle outlets shall be installed so that no point along the wall line is more than 2' measured horizontally from a receptacle outlet in that space (CEC 210.52(C)(1)).
-All countertop receptacles outlets shall be GFCI protected (CEC 210.8(A)6).
-Countertop receptacles outlets shall be located no more than 20" above the countertop (CEC 210.52C5).
-Islands or peninsula countertop spaces with a long dimension of 24" or greater and a short dimension of 12" or greater must have at least one electrical outlet (CEC 210.52C2). If an island has a sink and/or countertop range a second receptacle maybe required (CEC210.52C4).
-In lieu of providing electrical load calculations at the time of submittal/permit issuance, individual (dedicated) circuits will be required for the following appliances: garbage disposals, microwaves, compactors and dishwashers (CEC 210.19A1b).
-Electric range and ovens shall be supplied with a 40 or 50 amp branch circuit (CEC 210.23C).
-Kitchen dishwasher circuit must be GFCI protected (CEC 210.8D).
-15-20 ampere receptacles in dwelling units shall be listed tamper-resistance receptacles (CEC 406.12(A)).
-Dishwashers shall be connected with the approved drainage airgap devices located above the flood level rim of the sink (CPC 807.3).
-A mechanical permit is required to replace a kitchen exhaust hood that includes an outside air vent. The vent shall terminate on the building exterior at least 3 feet from another opening into the building. Flexible (corrugated) ducting is not allowed for exhaust hoods (CMC 504.3).
-Garage to kitchen openings - Door to garage is required to be a minimum 13/8" solid core, or 20 minute fire rated self-closing/self-latching door (CRC R302.5.1). Kitchen-Garage separation –side of garage wall- must have a minimum covering of 1/2"gypsum board or equivalent (CRC table R302.6).
-Clear passageway min. 36" between counter fronts and appliances or counters and walls (CBC 1208.1).
-All installed lighting shall be high efficacy (CEnerC 150.0(k)1A).
-Under-cabinet lighting shall be switched separately from other lighting system (CEnerC 150.0(k)2L).
-Newly installed fixture shall be water-conserving in compliance with the CGC 4.303. Kitchen faucets shall not exceed 1.8 GPM.
-All Existing fittings not included in the scope of new work shall be replaced if necessary to comply with SB407 Plumbing Fixtures Replacement requirements



Designer: Ross Rohrer

NUMBER	DATE	REVISED BY	DESCRIPTION
1	3/8/2021	Ross Rohrer	Lot Coverage fix A1 & A3

REVISION TABLE

Remodel Plan

Toliao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

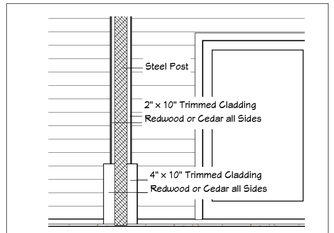
DATE:
4/11/2021

SCALE:

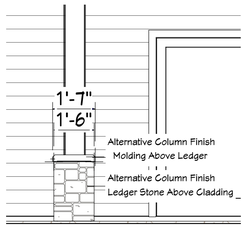
SHEET:
A6

No Changes to Roof Heights And Floor Heights
Heights Shown on Page A3

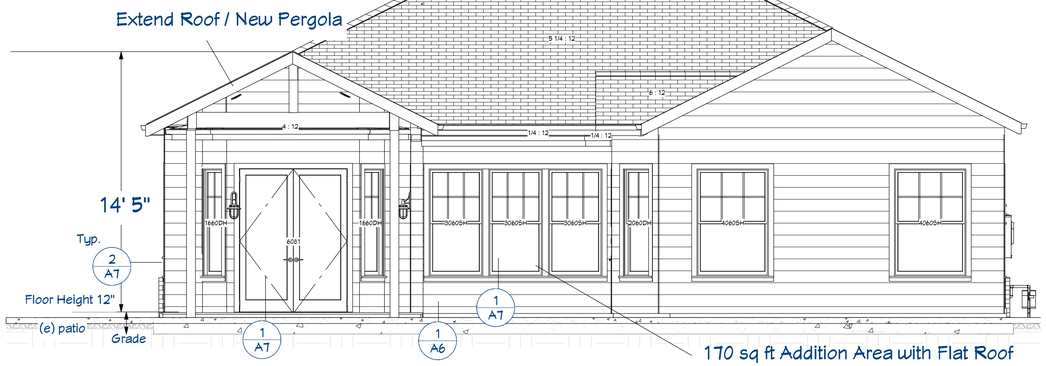
West Elevation No Change



2 / A7 Column Detail Typ.



Alternative Column Finish

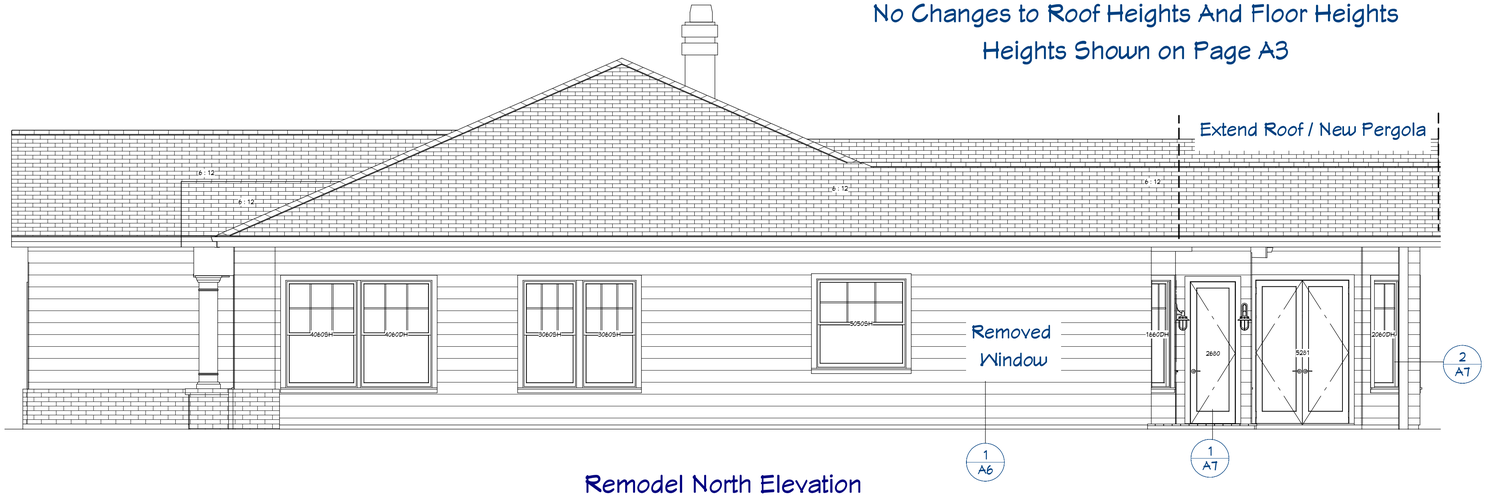


Remodel East Elevation

the 3 windows shown are windows
removed during demolition and are reused.

South Elevation No Change

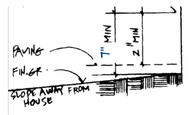
No Changes to Roof Heights And Floor Heights
Heights Shown on Page A3



Remodel North Elevation

SCALE: 1' = 1/4"

(N) Exterior to match existing Ship Lap above 2 x 15lbs type D building paper. 4" minimum above grade or 2" minimum above concrete and paving. *(Paper to be installed independently. See Layer and Flashing detail 1/A5)*

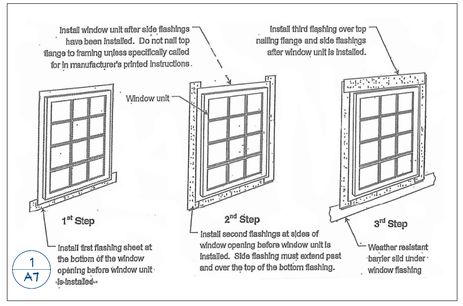


Designer: Ross Rohrer

R806.1 Ventilation required. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air.

Exception: Attic ventilation shall not be required when determined not necessary by the code official due to atmospheric or climatic conditions.

Campbell Ca. is Climate Zone 4.



REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

Remodel Elevations

Tollao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

SHEET:
A7

(n) Rein. Conc Ftg 36" x 36" x 36" 24" x 24" Drilled Pier Non Lateral Brace

9 SD6

Center Piers Below New Posts

11'-3"

13 SD3

24" x 24" x 11'6" Drilled Pier Lateral Brace

14'-2"

Typ. 10 SD5

9 SD5

HDU5

9 SD3

(n) Slab Fdn

(n) Rein. Conc Ftg 60" x 84" x 24" Depth w/#5@12" o.c. top & bottom, ea. way

15 SD6

(n) Rein. Conc Ftg 78" x 60" x 24" Depth w/#5@12" o.c. top & bottom, ea. way

E1 S2

5 SD3

L=10'

(n) Slab and Fdn

(e) Slab Fdn

2

(n) HF x 24 x1 1/8 H.S.

(n) HFX18 1 1/8

15 SD6

(n) HFX18 1 1/8

1B HFX1

15 SD6

(e) Slab Fdn

5 SD3

(n) Rein. Conc Ftg 24" x 24" x 12"

HDU5

(n) Rein. Conc Ftg 24" x 24" x 12"

9 SD5

5 SD3

(n) 5" Thk Rein. Conc Slab w/#4 @ 16" o.c. ea. way over 15 mil vapor barrier over 4" clean crushed gravel over pre-soaked earth

(e) Slab

WALL SCHEDULE	
2D SYMBOL	WALL TYPE
	8" CONCRETE STEM WALL
	8" CONCRETE STEM WALL, NEW
	DECK RAILING/FENCE
	INTERIOR-4
	INTERIOR-6
	ROOM DIVIDER
	SIDING-6
	SIDING-6, NEW
	STUCCO-22
	STUCCO-6

S S

Foundation

46'-10"

11'-10"

14'-3"

7 1/2" 3' 4" 3' 4" 3'

13 SD3

11 7/16"

11 SD3

13 SD3

(n)HSS 6" x 6" x 5/16"

2'

(n) 6 x 12 Redwood beam

(n) 6 x 6 Redwood Kng Pst

7 SD4

6 SD3

(n) 6 x 12 Redwood beam

(n) flat roof 1/4" slope lap to (e) eaves

8 SD4

9 SD2

(n) 1/2 roof ply typ

(n) 2 x 8 rftrs 24" o.c.Redwood typ.

(n) covered porch / pergola

9 1/2"

14'-5"

(e) bedroom

5 SD6

HDU5

(n) wall

(n) family

E1 S2

6 SD4

Field Verify 4" x 12" HDR

2'-6"

5'-6 3/4"

L=10'

2

(n) 2 x 12 rftrs 24" o.c. typ.

(n) HFX 24 1 1/8

(n) 6 x 6 pst

(n) HFX 18 x1 1/8 H.S.

9 SD2

MST48 BM to Blking

2'-3 1/4"

(e) bath

5 SD2

(n) 4" x 10" df hdr in attic / collector w/MST48s ea. end

10 SD6

MSTA36 Strap Rftr to Rftr

5 HFX2

(e) closet

(e) wc

30X22 ATTIC ACCESS

(n) 1/2 roof ply typ

13 SD2

(n) 5 1/4" x 11 7/8" PSL

(e) dining

HDU5

12'-8"

5 SD5

(n) 6 x 6 pst

12 SD2

(n) 6 x 6 pst

(n) 5 1/4" x 11 7/8" PSL

(e) bedroom

15'-4"

(e) family

(e)rafters

(n) kitchen

26'-5 7/8"

(e) bath

(e) hall

77'-8"

6'-7 13/16"

56'-8 3/8"

(e) bedroom

(e) laundry

(e) office

(e) living

24'-7 3/4"

(e) garage

6'-1 7/16"

6'-9 11/16"

6'-1"

17'-7"

(e) solar

(e) electrical

(e) gas

21'-2 3/4"

12'-11 1/8"

12'-8 1/8"

46'-10"

1st Floor

SCALE: 1' = 1/4"

REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALLERO C 46956 Exp. 9-30-21 STATE OF CALIFORNIA

APRIL 14, 2021

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

Structural 1

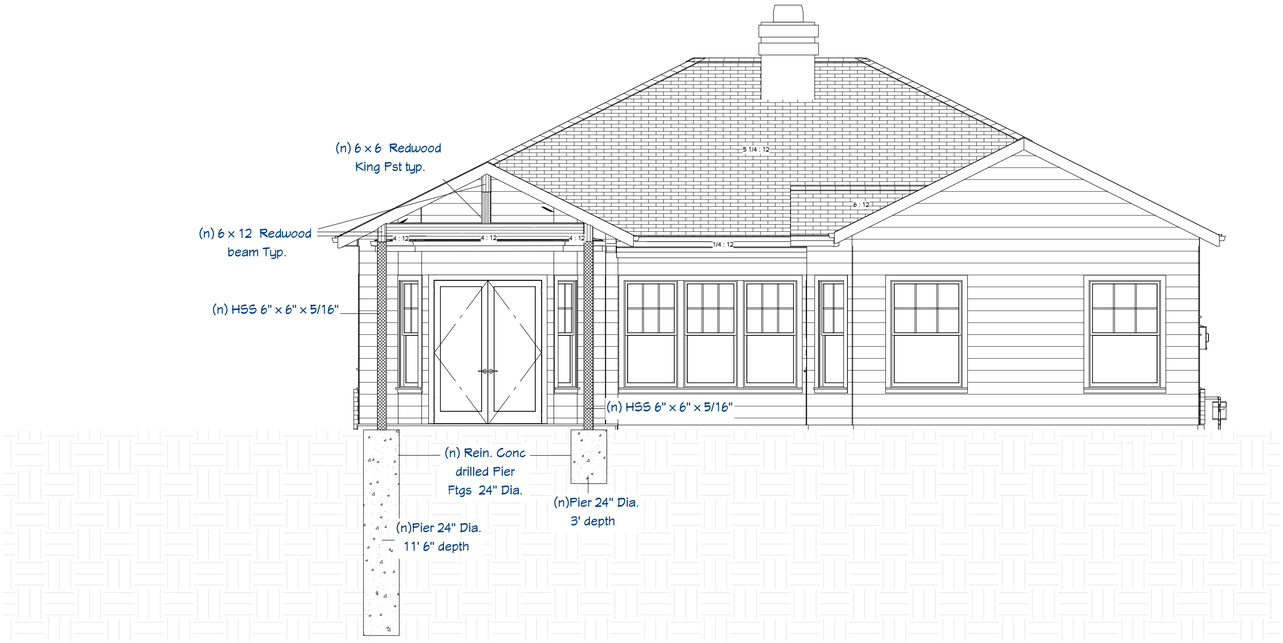
Toliao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

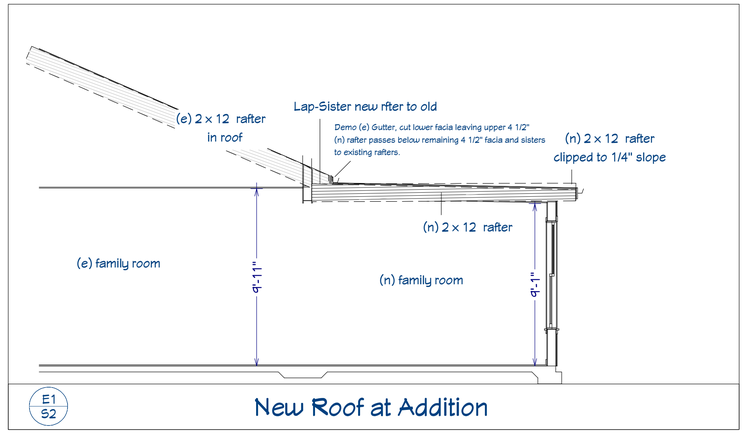
DATE:
4/11/2021

SCALE:

SHEET:
S1



Elevation 2



Elevation 1

SCALE: 1' = 1/4"

Elevation 3

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

Structural 2
Elevations

Tollao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1123 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

SHEET:
S2

NOTES:

1. ALL ANCHOR BOLTS NOT SHOWN ARE TO BE 5/8" DIA. x 12" A307 ANCHOR BOLT AT 4'-0"o.c. W/ 3" x 3" x 1/4" WASHER PLATE. SEE PLAN FOR FOR SPECIAL ANCHOR BOLT REFERENCE AT SHEAR WALLS.
2. ALL HOLDOWNS SHOWN ON THIS PLAN TO BE CONNECTED FROM POST IN 1ST. FLOOR WALL TO FOOTING BELOW (UNO) AND TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
3. ALL INTERIOR FOOTING LOCATIONS NOT DIMENSIONED SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED FOOTINGS AND/OR THE PERIMETER FOUNDATION.
4. STITCH NAIL ALL DOUBLE OR TRIPLE MEMBERS W/16d @ 4" o.c., STAGGERED (TYP.).
5. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.

LEGEND:

NEW FOOTING

EXISTING FOOTING

SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET SD-4).

HD OR HDU5 — INDICATES LOCATION OF SIMPSON HDU5 HOLDOWN (FULLY SCREWED W/ 14-SDS 1/4x2 1/2) W/ 2 -2x POST, UNO. (PRE-DRILL NAILS OR USE 4x MIN. IF SPLITTING OCCURS) W/ SB5/8x24 AT (N) CONC. LOCATION.

ML OR LVL — 1 3/4" x 11 7/8" MICRO-LAM BEAM, MANUFACTURED BY TRUSS JOIST CO.,U.N.O.
PSL — 3 1/2" x 11 7/8" PARALLAM BEAM, MANUFACTURED BY TRUSS JOIST CO., U.N.O.
TS OR LSL — 1 3/4" x 11 7/8" TIMBERSTRAND RIM, MANUFACTURED BY TRUSS JOIST CO., U.N.O.

ROOF FRAMING NOTES

1. PROVIDE A 2-2X POST BELOW ALL BEAM ENDS A LARGER POST IS SPECIFIED.
2. NAIL ROOF PLYWOOD W/ EDGE NAILING TO ALL FRIEZE BLOCKING AT EXTERIOR WALLS AND RAFTERS IN LINE WITH EXTERIOR WALLS OR INTERIOR SHEAR WALLS.
3. EXTEND ALL ROOF PLYWOOD BELOW CALIF. FRAMED AREAS AND EDGE NAIL TO BEAM OR PERIMETER WALL BLOCKING.
4. NAIL SHEAR MATERIAL WITH TWO ROWS OF EDGE NAILING TO ALL POSTS ATTACHED TO HOLDOWN ANCHOR OF STRAPS
5. AT ALL POSTS, PROVIDE A POST OF IDENTICAL SIZE (UNLESS A LARGER IS SPECIFIED IN FLOOR AND WALL BELOW.
6. LOCATE ALL FLUSH BEAMS DIRECTLY BELOW BEARING WALL OR POST IN FLOOR ABOVE.
7. NAIL FLOOR PLYWOOD WITH EDGE NAILING TO ALL FLUSH BEAMS. JOIST OR BLOCKING IN LINE WITH OR OVER EXTERIOR WALLS OR SHEAR WALLS.
8. ALL EXTERIOR PORCH POST'S ARE TO BE SUPPORTED ON A RAISED CONCRETE CURB. SEE FOUNDATION DRAWINGS AND ARCHITECTURAL DRAWINGS (BY OTHERS) FOR MORE INFORMATION.
9. PROVIDE SOLID 2X BLOCKING BETWEEN RAFTERS OVER ALL BEARING WALLS AND BEAMS. ATTACH TO BEAM OR WALL BELOW W/ 3-16d PER BLOCK, U.N.O. EDGE NAIL PLYWOOD TO BE BLOCKING.
10. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED. GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL. THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD
12. AT NAILED CONNECTIONS. CARE IS TO BE TAKEN DURING CONSTRUCTION TO ENSURE THAT SPLITTING OF PLYWOOD DOES NOT OCCUR. ANY SPLIT MEMBER SHALL BE REMOVED AND REPLACE, USING A METHOD OF ATTACHING THE SPECIFIED CONNECTORS IN A WAY TO PREVENT SPLITTING.
13. ALL SPECIFIED BLOCKING. IS TO BE INSTALLED "TIGHT" BETWEEN ADJACENT MEMBERS.
14. WALL WINDOWS, DOOR AND OPENING LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR ALL DIMENSIONS AND EXACT LOCATIONS.
15. ALL HATCHED AREAS SHOWN ON FRAMING PLANS BELOW INDICATE CALIFORNIA FRAMING W/ 2 X 6 @ 24' O.C. SUPPORT RIDGE, HIP AND VALLEYS W/ RIDGE, HIP AND VALLEYS W/ KICKER AT 48" O.C. TO RAFTER BELOW (TYP. U.N.O.).

LEGEND

2x4 @ 16" O.C. STUDWALL BELOW (SEE SHEAR WALL SCHEDULE ON SHEET SD-4 FOR LOCATION OF 3X STUDS.

2X6 @ 16' O.C. STUD WALL BELOW, U.N.O. (SEE ARCHITECTURAL FOOT OTHER LOCATIONS).

4X12 HEADER BM. (U.N.O.) REQ'D. AT EXT. WALLS & INT. BRG. WALLS ONLY.

6X10 HEADER BEAM AT 2X6 STUDWALL LOCATIONS.

INTERIOR BEARING WALL.

SHEAR WALL LOCATIONS. (SEE PLANS & SHEAR WALL SCHEDULE ON SHEET - / SD-4)

PROVIDE 3/8" PLYWOOD, NAIL W/ 8d COMMON AT 4"o.c. EDGE AND 12"o.c. FIELD. AT ALL EXTERIOR NON-SHEAR WALL LOCATIONS (INCLUDING AREAS ABOVE DOOR & WINDOW, BELOW DOOR, ETC.)

FCB — FLUSH CEILING/FLOOR BEAM
PSL — PARALLAM BEAM, MANUFACTURED BY TRUSS JOIST CO.
D.S. — DOUBLE STUDS

SHOP DRAWINGS:

SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. ANY REVIEW OF SHOP DRAWINGS BY THIS OFFICE IS ONLY FOR GENERAL CONFORMANCE TO THE STRUCTURAL REQUIREMENTS AND IN NO WAY GUARANTEES THE ACCURACY OR COMPLETENESS OF INFORMATION THEREON. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE ALL CONSTRUCTION IS IN FULL COMPLIANCE WITH THE LATEST SET OF STRUCTURAL DRAWINGS.

NOTE:

1. ALL 'PA' OR STRAP TYPE ANCHORS TO BE INSTALLED OVER PLYWD. SHEAR MATERIAL.
2. ALL DBL. 2x4 POSTS AT HOLDOWN, 'HT', 'PA' OR STRAP LOCATIONS TO BE NAILED TOGETHER WITH 16d AT 4"o.c., STAGGERED.
3. IF 2x SHIMS OR 'PAD-OUT' STUDS ARE USED BETWEEN THE HOLDOWN ANCHOR AND THE POST SPECIFIED, ATTACH SHIMS TO THE SPECIFIED POST WITH A MINIMUM OF 16d AT 4"o.c., STAGGERED.

'CS' & 'CMST' STRAP CLARIFICATION:

STRAP LENGTH CLARIFICATION EXAMPLE: CMST12/45"

STRAP IDENTIFICATION, SEE SIMPSON CATALOG FOR ADDITIONAL INFO.

REQUIRED END LENGTH (AT EACH END), SEE SIMPSON CATALOG FOR TOTAL CUT LENGTH REQUIREMENTS. FILL ALL HOLES, LOCATED WITHIN THE END LENGTH SPECIFIED, WITH SIMPSON N16 NAILS, INCLUDING TRIANGULAR HOLES. USE 14" END LENGTH NAILING, U.N.O. FOR CS16 STRAP, 45" END LENGTH NAILING, U.N.O. FOR CMST12 STRAP, 25" END LENGTH NAILING, U.N.O FOR CMSTC16

STRAP LENGTH CLARIFICATION EXAMPLE: CMST12x90"

TOTAL LENGTH OF STRAP
USE 36" TOTAL LENGTH CLARIFICATION FOR CS16, U.N.O., 50" TOTAL LENGTH FOR CMSTC16, U.N.O.

MICRO-LAM NAILING:

3- ML WITH 3- ROWS OF 16d COMMON NAILS AT 12"o.c. EACH SIDE (STAGG.) OR 2- ROWS OF 1/2" ⅜ M.B.'S AT 24"o.c. (STAGG.)

2- ML WITH 2- ROWS OF 16d COMMON NAILS AT 12"o.c. EACH SIDE (STAGG.) OR 2- ROWS OF 1/2" ⅜ M.B.'S AT 24"o.c. (STAGG.)

HOLDOWN NOTES:

1. ALL STRAP TYPE ANCHORS TO BE INSTALLED OVER PLYWD. SHEAR MATERIAL.
2. ALL DBL. 2x4 POSTS AT HOLDOWN, 'HDU5' OR STRAP LOCATIONS TO BE NAILED TOGETHER WITH 16d AT 4"o.c., STAGGERED.
3. IF 2x SHIMS OR 'PAD-OUT' STUDS ARE USED BETWEEN THE HOLDOWN ANCHOR AND THE POST SPECIFIED, ATTACH SHIMS TO THE SPECIFIED POST WITH A MINIMUM OF 16d AT 4"o.c., STAGGERED.

NOTE:
USE 2x6 STUDS AT ALL PLUMBING WALLS SEE ARCHITECTURAL DRAWINGS FOR LOCATION

NOTE:
SEE ARCHITECTURAL DRAWINGS FOR CRAWL SPACE ACCESS.

HANGER SCHEDULE
JOISTS & BEAMS, U.N.O.

JOISTS/ BEAM	TOP FLANGE HANGER	FACE MOUNT HANGER
2x	-	'LUS'
LVL	WPU1.81/11.88	HU11 (MAX.)
3 1/2 x 11 7/8 OR 2 -LVL	HWU3.56/ 11.88	HGUS412
5 1/4 x 11 7/8 PSL OR 3 - LVL	HWU5.50/ 11.88	HGUS5.50/12
7 x 11 7/8 PSL	HWU7.12/ 11.88	HGUS7.25/12

NOTE: USE 'HGUS' HANGERS FOR BEAMS WITH SHEAR WALLS AND/ OR HOLDOWNS ABOVE.

NOTE:
USE 'HGUS' HANGERS FOR ALL BEAMS W/ HOLDOWNS AND SHEARWALLS ABOVE THE BEAM.

CEILING JOIST SCHEDULE ALTERNATE TO 24" o.c. SPACING		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO-9-0"	2X4 DF #2 @ 16" O.C.	U24
9'-1" TO 15'-6"	2X6 DF #2 @ 16" O.C.	U26
15'-7" TO 20'-0"	2X8 DF #2 @ 16" O.C.	U28
20'-1" TO 24'-0"	2X10 DF #2 @ 16" O.C.	U210
24'-1" TO 28'-0"	2X12 DF# 2 @ 16" O.C.	U210

CEILING JOIST SCHEDULE		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO-8-0"	2X4 DF #2 @ 24" O.C.	U24
8'-1" TO 13'-6"	2X6 DF #2 @ 24" O.C.	U26
13'-7" TO 17'0"	2X8 DF #2 @ 24" O.C.	U28
17'-1" TO 20'-0"	2X10 DF #2 @ 24" O.C.	U210
20'-1" TO 24'-0"	2X12 DF# 2 @ 24" O.C.	U210

NEW FOOTING SHALL MATCH EXISTING

PRIOR TO THE CONSTRUCTION OF THE NEW FOUNDATION, VERIFICATION IS REQUIRED TO SHOW THAT THE NEW FOUNDATION SYSTEM MATCHES THE EXISTING (E) FOOTINGS. EXCAVATE AS REQUIRED FOR THE FIELD INSPECTOR TO VERIFY THE TYPE OF EXISTING FOUNDATION SYSTEM. PIER AND GRADE BEAM FOUNDATION SYSTEM SHALL BE AS PER THE LATEST CALIFORNIA BUILDING CODE AND SHALL BE DESIGNED BY A CIVIL, OR STRUCTURAL ENGINEER AND APPROVED BY THE CITY BUILDING DIVISION PRIOR TO COMMENCING OF CONSTRUCTION. PIER DEPTH SHALL BE MINIMUM AS EXISTING.

SHOP DRAWINGS:

SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. ANY REVIEW OF SHOP DRAWINGS BY THIS OFFICE IS ONLY FOR GENERAL CONFORMANCE TO THE STRUCTURAL REQUIREMENTS AND IN NO WAY GUARANTEES THE ACCURACY OR COMPLETENESS OF INFORMATION THEREON. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE ALL CONSTRUCTION IS IN FULL COMPLIANCE WITH THE LATEST SET OF STRUCTURAL DRAWINGS.

LUMBER

1. PLATES, STUDS, JOISTS AND BEAMS. (UNO)

MEMBERS	GRADE OF WOOD (U.N.O.)
A. 2x OR 3x MUDSILLS	P.T.D.F.
B. 2x, 3x, 4x RAFTER JOIST BEAM SHALL	D.F. NO. 2
C. 6x AND LARGER	D.F. NO. 1
D. ALL STUDS	D.F. NO.2
E. BLKG. & SOLE PLATES	D.F. CONSTR. GRADE
F. GLU LAM BEAMS	24F-V4, 24F-V8 AT CANTILEVER
G. TOP PLATES	D.F. CONSTR. GRADE

NOTE: ALL LUMBER SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT TIME OF INSTALLATION.

2. PLYWOOD

LOCATION		GRADING	NAILING (U.N.O.)
ROOF	- 1/2" CDX	APA (32/16)	8d @ 6" EDGE, 12" FIELD
FLOOR	- 3/4" T&G CDX	APA (32/16)	10d @ 6" EDGE, 10" FIELD

NOTE: ALL GRADE MARKS ON PLYWOOD SHEATHING AND LUMBER SHALL BE
NOTE: LEGIBLEADE MARKS ON PLYWOOD SHEATHING AND LUMBER SHALL BE LEGIBLE.

WOOD FRAME

1. ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED FIR.
2. ALL METAL CONNECTORS SHALL BE SIMPSON STRONG-TIE CONNECTORS. THE NAILS FOR THESE CONNECTORS SHALL BE JOIST HANGER NAILS AS MANUFACTURED BY THE SIMPSON CO.
3. PROVIDE FIRE STOPS AT ALL INTERSECTIONS OF STUD WALLS AT FLOOR, CEILING AND ROOF. FIRE STOPS SHALL BE 2x NOMINAL THICKNESS OF WOOD AND SHALL BE THE FULL WITH OF THE ENCLOSED SPACE. PLACE FIRE STOPS AT A MAXIMUM SPACING OF 10'-0" IN EACH DIRECTION AND AT THE SAME LINES AS FIRE STOPS IN ADJACENT STUD WALLS.
4. TOP PLATES OF ALL STUD WALLS SHALL BE 2 PIECES THE SAME STUD SIZES. SPLICES TO LAP 4'-0" MINIMUM AND BE NAILED PER THE DETAILS.
5. BOLT HOLES IN WOOD SHALL BE 1/32" TO 1/16" LARGER THAN THE NORMAL BOLT DIAMETER. ALL BOLTS SHALL HAVE STANDARD CUT WASHER UNDER HEAD AND NUT UNLESS NOTED OTHERWISE.
6. ALL BOLTS SHALL BE RETIGHTENED PRIOR TO THE APPLICATION OF SHEATHING PLASTER, ETC.
7. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY DETAILED
8. PROVIDE 2x SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT ALL SUPPORTS BLOCKING SHALL BE ONE PIECE AND THE FULL DEPTH OF THE JOIST RAFTER.
9. CROSS BRIDGING OR SOLID BLOCKING SHALL BE PROVIDED AT 8'-0" O.C. MAXIMUM FOR ALL FLOOR JOISTS MORE THAN 12" DEEP AND AT 10'-0" O.C. MAXIMUM FOR ALL RAFTERS MORE THAN 8" DEEP.
10. PROVIDE DOUBLE JOISTS UNDER PARTITIONS WHICH ARE PARALLEL TO THE FLOOR JOISTS.
11. PROVIDE 2x FULL DEPTH BLOCKING UNDER PARTITION WALLS WHICH ARE PERPENDICULAR TO JOISTS.

ABBREVIATIONS

A.B.	ANCHOR BOLT	M.A.	MST ABOVE
ABV.	ABOVE	M.B.	MACHINE BOLT
BD	BOARD	MFR.	MANUFACTURER
BM.	BEAM	MAX.	MAXIMUM
BLW.	BELOW	MIN.	MINIMUM
BLK.	BLOCK OR BLOCKING	MTL.	METAL
BLK'G	BLOCK OR BLOCKING	(N)	NEW
B.N.	BOUNDRY NAILING	N.T.S..	NOT TO SCALE
C.B.C.	CALIFORNIA BUILDING CODE	OC	ON CENTER
CLG.	CEILING	O.F.	OUTSIDE FACE
C.B.	CEILING BEAM	O.H.	OPPOSITE HAND
OC.	CENTER TO CENTER, ON CENTER	P.A.	POST ABOVE
		PL	PLATE
COL.	COLUMN	PLY.	PLYWOOD
CONC.	CONCRETE	PLYWD.	PLYWOOD
CONT.	CONTINUOUS	P.E.N.	PLYWOOD EDGE NAILING
DL	DEAD LOAD	PLF	POUNDS PER LINEAL FOOT
ϕ	DIAMETER	P.S.I.	POUNDS PER SQ. INCH
D.F.	DOUGLAS FIR	P.S.F.	POUNDS PER SQ. FOOT
D.S.	DOUBLE STUD	PSL	PARALLAM STRAND LUMBER
EA.	EACH	P.T.	PRESSURE TREATED
E.W.	EACH WAY	P.T.D.F	PRESSURE TREATED DOUGLAS FIR
(E)	EXISTING		
E.N.	EDGE NAILING		
EXT.	EXTERIOR	RFTR	RAFTER
F.O.S.	FACE OF STUD	REBAR	DEFORMED REINFORCING BAR
F.O.C.	FACE OF CONCRETE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
F.N.	FIELD NAILING	S.W.S	SHEAR WALL SCHEDULE
FIN.	FINISH	SHTG.	SHEATHING
FHWS	FLAT HEAD WOOD SCREW	SHT.	SHEET
FLR.	FLOOR	SPECS.	SPECIFICATIONS
F.C.B.	FLUSH CEILING BEAM	STD.	STANDARD
FTG.	FOOTING	STL.	STEEL
GYP.	GYPSUM	SQ.	SQUARE
GLB	GLUED, PRESSURE LAMINATED BEAM	THD.	THREAD
		T.O.BM.	TOP OF BEAM., ETC.
H.F.	HEM FIR	T & G	TONGUE & GROOVE
HGR.	HANGER	T & B	TOP & BOTTOM
HDR..	HEADER	TL	TOTAL LOAD
H.A.	HOLDOWN ABOVE	TYP.	TYPICAL
H.D.	HOLDOWN	U.B.C.	UNIFORM BUILDING CODE
HORIZ.	HORIZONTAL		
H.D.G.	HOT DIPPED GALVANIZED	U.N.O.	UNLESS NOTED OTHERWISE
ICC	INTERNATIONAL CODE COUNCIL		
INT.	INTERIOR	U.O.N.	UNLESS OTHERWISE NOTED
JST.	JOIST		
LVL	LAMINATED VENEER LUMBER	VERT.	VERTICAL
L.S.	LAG SCREW	W/	WITH
LL	LIVE LOAD	W.W.F.	WELDED WIRE FABRIC
K.B.	KICK BRACE		
K.P.	KING POST OR KICKER POST		

FOUNDATIONS

1. ALL EXISTING FILL SOIL AND DISTURBED NATURAL SOILS ARE TO BE EXCAVATED AND REPLACED WITH PROPERLY COMPACTED FILL. ALL FILLING, BACKFILLING, RECOMPACTION, ETC. IS TO BE ACCOMPLISHED ONLY UNDER THE SUPERVISION OF A SOILS ENGINEER. COMPACTED FILL SHALL BE 95% DENSITY.
2. FOOTINGS ARE TO BE CARRIED A MINIMUM OF 18" INTO FIRM UNDISTURBED NATURAL SOIL OR APPROVED COMPACTED FILL.
3. DESIGN BEARING PRESSURE IS 1500 PSF WITH A 33% INCREASE FOR SEISMIC OR WIND LOADING.
4. RELATIVELY NON-EXPANSIVE FILL SHOULD BE USED IN BACKFILLING BEHIND WALLS ALL WALLS SHALL BE ADEQUATELY SHORED DURING THE BACKFILL OPERATION.

CONCRETE:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
2. AGGREGATES SHALL BE NATURAL SAND AND ROCK CONFORMING TO ASTM C33 (MAXIMUM AGGREGATE SIZE SHALL BE 3/4")
3. CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C-150, TYPE IV. (SULFIDE RESISTANT).
4. THE FOLLOWING MINIMUM CLEAR DISTANCES BETWEEN REINFORCING STEEL AND FACE OF CONCRETE SHALL BE MAINTAINED UNLESS NOTED OTHERWISE

   POURED AGAINST FORMS 2"
   POURED AGAINST EARTH 3"
5. PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN. PIPES OF DUCTS EXCEEDING ONE-THIRD THE SLAB OR FOOTING THICKNESS SHALL BE PLACE IN THE STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAINED.
6. DOWELS, ANCHOR BOLTS AND OTHER EMBEDDED ITEMS ARE TO BE SECURED IN PLACE BEFORE CONCRETE IS POURED.
7. REFER TO ARCHITECTURAL DRAWINGS FOR REVEALS, AREAS OF TEXTURED CONCRETE OR SPECIAL FINISHES, ITEMS REQUIRED TO BE CAST INTO CONCRETE, CURBS AND SLAB DEPRESSIONS.
8. MINIMUM CEMENT CONTENT SHALL BE 5 SACKS PER CUBIC YARD FOR 2500 PSI CONCRETE.
9. MAXIMUM SLUMP SHALL BE 4".
10. OPTIONAL COLD JOINTS MAY BE USED WHERE SHOWN, COLD JOINT EDGES SHALL BE CLEAN, FREE OF EXTRANEOUS AND INTENTIONALLY ROUGHENED.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 40 FOR SIZES #4 AND SMALLER AND GRADE 60 FOR SIZES #5 AND LARGER.
2. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWA D12-1 USING PROPER LOW HYDROGEN ELECTRODES. ALL BARS TO BE WELDED SHALL CONFORM TO ASTM A706.
3. WELDED FABRIC (MESH, WWF) SHALL CONFORM TO THE LATEST REVISED ASTM A185. SMOOTH WIRE FABRIC SHALL CONFORM TO ASTM A85, YIELD STRENGTH 60 KSI.
4. ALL BARS IN CONCRETE SHALL BE LAPPED A MINIMUM OF 48 BARS DIAMETERS (2'-0" MIN.) AT ALL SPLICES UNLESS NOTED OTHERWISE.
5. SPLICES OF HORIZONTAL REBAR IN FOOTING SHALL BE STAGGERED 4'-0" MINIMUM.
6. ALL BENDING OF REINFORCING STEEL SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
7. REINFORCING SHALL BE PLACED AND SUPPORTED IN A TRUE LINE AS SHOWN.
8. ALL REINFORCING SHALL BE CLEAN AND FREE OF EXTRANEOUS MATERIAL.

FLOOR I-JOIST

1. FLOOR JOISTS ARE TO BE DESIGNED FOR L/480 (DL & LL) MAXIMUM DEFLECTION CRITERIA.

MICROLAM BEAMS:

MICRO LAM (ML OR LVL) BEAMS ARE TO BE THE SIZE SHOWN ON THE PLANS AND TO BE MANUFACTURED BY TRUSS JOIST CORP. MICRO LAM BEAMS SHALL HAVE THE FOLLOWING ALLOWABLE DESIGN STRESSES.
E = 1,900,000 PSI
Fb = 2,600 PSI
Fv = 285 PSI

PARALLAM BEAMS:

PARALLAM (PSL) BEAMS ARE TO BE THE SIZE SHOWN ON PLANS, AND TO BE MANUFACTURED BY TRUSS JOIST CORP. PARALLAM BEAMS SHALL HAVE THE FOLLOWING ALLOWABLE DESIGN STRESSES.
E = 2,000,000 PSI
Fb = 2,900 PSI
Fv = 290 PSI

TIMBERSTRAND:

TIMBERSTRAND (TS) MEMBERS ARE TO BE THE SIZE SHOWN ON PLANS AND TO BE MANUFACTURED BY TRUSS JOIST CORP.

GLB NOTES:

1. ALL FABRICATION AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED DOUGLAS FIR (COAST REGION) LUMBER BY THE WEST COAST LUMBER MAN'S ASSOCIATION AND THE CURRENT EDITION OF TIMBER CONSTRUCTION.
2. ALL GLUED LAMINATED MEMBERS SHALL BE DOUGLAS FIR, COMBINATION 24F-V4 (U.N.O.) OR 24F-V8 WITH WATERPROOF RESORCINOL OR PHENOL RESORCINOL GLUE CONFORMING TO THE FEDERAL SPECIFICATIONS MIL-A-397. (USE 24F-V8 AT CANTILEVER CONDITION).
3. FINISH OF THE MEMBERS SHALL BE INDUSTRIAL APPEARANCE GRADE IN CONFORMANCE WITH THE STANDARD APPEARANCE GRADES OF THE A.I.T.C.
4. A CERTIFICATE OF INSPECTION FOR EACH GLU-LAM BEAM FROM AN APPROVED TESTING AGENCY SHALL BE SUBMITTED TO AND APPROVED BY THE LOCAL BUILDING DEPT. AND BY THE ENGINEER PRIOR TO ERECTION.

EPOXY AND ANCHORS: (ICC-ES ESR 2508)

1. EPOXY GROUT USED FOR THE SETTING OR DEFORMED REINFORCING BARS SHALL BE SIMPSON 'SET-XP' EPOXY SURFACE OF EXISTING CONCRETE SHALL BE FREE FROM DUST OR DEBRIS PRIOR TO INJECTION EPOXY PRODUCT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. EPOXY USED FOR THE SETTING OF ALL-THREAD ROD BOLTS SHALL BE SIMPSON 'SET-XP' EPOXY. EPOXY SHALL BE INSTALLED WITH MANUFACTURER'S RECOMMENDATIONS AND PROVIDE SPECIAL INSPECTION BY CERTIFIED TESTING AGENCY.

DESIGN LOADS

LIVE LOADS:		
ROOF	20	PSF
LIVE LOAD	40	PSF

WIND LOADS:		
BASIC WIND SPEED, V3S	95	95 MPH (LRFD)
WIND IMPORTANCE FACTOR, Iw	1.0	
EXPOSURE	B	
INTERNAL PRESSURE COEFF, GCPI	0.18	

SEISMIC LOADS:	
SEISMIC IMPORTANCE FACTOR, I	1.0
RISKY CATEGORY	II
SHORT PERIOD SPECTRA ACCELERATION, Ss	2.214
LONG PERIOD SPECTRA ACCELERATIION, S	0.795
SITE CLASSIFICATION	D
SHORT PERIOD DESIGN RESPONSE, SDS	1.771
LONG PERIOD DESIGN RESPONSE, SDI	NULL-SEE SECTION 11.4.8
SEISMIC DESIGN CATEGORY, SDC	D
SEISMIC FORCE RESISTING SYSTEM	PLYWOOD SHEAR WALLS: Rx = Ry = 6.5; Rx = Ry = 1.25 AT CANTILEVER COLUMN

GENERAL NOTES:

1. ALL CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO THE 2019 BUILDING CODE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ELEVATIONS AND CONDITIONS PRIOR TO STARTING CONSTRUCTION.
3. ANY DEVIATIONS FROM THE PLANS. WHICH ARE NECESSITATED BY FIELD CONDITIONS OR ANY CONDITIONS DIFFERENT FROM THOSE INDICATED ON PLAN, SHALL BE CALLED TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO CONTINUING CONSTRUCTION. ALL WORK IS TO BE COORDINATED SO THAT COOPERATION BETWEEN THE TRADES, WHERE REQUIRED, IS ACCOMPLISHED.
4. ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, ELEVATIONS SECTIONS AND DETAILS.
5. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
6. MATERIAL NOTES AND SPECIFICATIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THE PROJECT SPECIFICATIONS.
7. VERIFY ALL OPENINGS THROUGH CONSTRUCTION WITH HEATING AND VENTILATING CONTRACTOR PLUMBING CONTRACTOR AND ELECTRICAL CONTRACTOR FOR SIZE AND LOCATION, PRIOR TO COMMENCING CONSTRUCTION.
8. SEE ARCHITECTURAL PLANS FOR SIZES AND LOCATIONS OF ALL DOOR AND WINDOW OPENINGS, LOCATION OF ALL NON-BEARING PARTITIONS, CONCRETE CURBS, FLOOR AND ROOF SLOPES, DRAINS, ELEVATIONS, LOCATIONS OF ALL STAIRWAYS, (IF ANY), MISCELLANEOUS HANDRAILS, LADDERS. HANGERS, STEEL GRATING, LOCATION OF ALL CONCRETE INSERTS, CLIPS, GROOVES, GROUNDS AND VENEER ANCHORS, LOCATION AND DETAIL OF MISCELLANEOUS YARDWORK INCLUDING WALKS, CURBS, DRIVEWAYS, TUNNELS AND FINISHED GRADING PLANS.
9. NO OPENINGS, POCKETS, ETC. SHALL BE PLACED IN SLABS DECKS, BEAMS, JOISTS, WALLS, COLUMNS, ETC. UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, NOTIFY THE STRUCTURAL ENGINEER WHEN (MECH., ELECT.) DRAWINGS SHOW OPENINGS, POCKETS, ETC., THAT ARE NOT LIKEWISE SHOWN ON THE STRUCTURAL DRAWINGS.
10. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED FINISH MATERIAL AND/OR STRUCTURAL MEMBERS AS REQUIRED AND AS CONFIRMED BY THE BUILDING INSPECTOR AND STRUCTURAL ENGINEER.
11. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING DURING CONSTRUCTION.
12. FRAMING CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE FRAMED SIMILAR TO TYPICAL DETAILS FOR THE RESPECTIVE MATERIAL.
13. THE CONTRACTOR AND/OR SUB-CONTRACTORS WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL STATE, OR LOCAL BUILDING CODES.
14. TRADE NAMES AND MANUFACTURERS REFERRED TO ARE FOR QUALITY STANDARDS ONLY, EQUIVALENT SUBSTITUTIONS WILL BE PERMITTED.
15. TYPICAL DETAILS SHALL APPLY WHERE NO SPECIFIC DETAILS OR SECTIONS GIVEN.

GENERAL CONSTRUCTION

1. RAFTERS SHALL BE FRAMED DIRECTLY OPPOSITE EACH OTHER RIDGES, VALLEYS AND HIPS. ALL RIDGE BOARDS, MAIN VALLEY AND HIP RAFTERS SHALL BE AT LEAST 2 IN. THICK (NOMINAL). IN NO CASE SHALL THE DEPTH BE LESS THAN THE CUT OF THE END OF THE RAFTER (U.N.O.)
2. WHERE APPLICABLE, RAFTERS SHALL BE NAILED TO ADJACENT PARALLEL CEILING JOIST TO FORM A CONTINUOUS THE BETWEEN EXTERIOR WALLS, (U.N.O.) WHERE CEILING JOISTS ARE NOT PARALLEL, RAFTERS, SHALL BE TIED BY A 1 X 4 (MIN.) CROSS TIE. THE CROSS TIES SHALL BE SPACED NOT MORE THAN 4'-0" O.C.
3. UNLESS SUPPORTED LATERALLY BY ADEQUATE FRAMING, THE MAXIMUM ALLOWABLE HEIGHT SHALL BE 14'-0" FOR 2 X 4 AND 3 X 4 STUD WALLS AND 20'-0" FOR A 2 X 6 STUD WALL (U.N.O.).
4. JOISTS SHALL BE SUPPORTED LATERALLY BY SOLID BLOCKING OR END HANGERS AT EACH END AND AT EACH SUPPORT. SOLID BLOCKING SHALL NOT BE LESS THAN 2" THICK (NOMINAL) AND THE FULL DEPTH OF THE JOISTS.
5. THE ENDS OF JOISTS, BEAMS, AND GIRDERS SHALL HAVE AT LEAST 1 1/2" OF BEARING ON WOOD OR METAL AND 3" OF BEARING ON CONCRETE OF MASONRY, (U.N.O.).
6. WHEN BOLTS ARE IN USE A WASHER NOT LESS THAN A STANDARD CUT WASHER OR A METAL PLATE OR STRAP IN LIEU THEREOF, SHALL BE BETWEEN THE WOOD AND THE BOLT HEAD AND BETWEEN THE WOOD AND THE NUT.
7. MACHINE BOLTS AND ANCHOR BOLTS SHALL CONFORM TO ASTM A307 (U.N.O.)
8. ALL BUILDINGS SHALL BE GRADED SO AS TO PROVIDE 5% POSITIVE DRAINAGE AWAY FROM THE HOUSE.
9. WOOD JOISTS AND FLOORS CLOSER THAN 18" OR WOOD GIRDERS AND SUPPORTS CLOSER THAN 12" TO THE GROUND SHALL BE PRESSURE TREATED WOOD
10. CONTRACTOR SHALL SUBMIT A CERTIFICATION OF CONFORMANCE FOR ALL GLUED-LAMINATED BEAMS TO BUILDING INSPECTION DEPT., PRIOR TO ERECTION.
11. PURLINS SHALL BE 2 X 6 OR THE SAME SIZE AS RAFTERS, WHICHEVER IS GREATER, (U.N.O.).
12. PROVIDE FIRE BLOCKING AT FLOORS, CEILING, COVES AND MID-HEIGHT OF WALLS OVER 10'-0" IN HEIGHT.

NAILING

CONNECTION	NAILING (U.N.O.) ON PLANS
1. JOIST TO SILL OR GIRDER TOENAIL	3-8d
2. BRIDGING TO JOIST, TOENAIL EACH END.	2-8d
3. 1" X 6" SUBFLR. OR LESS TO EA. JOISTS, FACE NAIL	2-8d
4. WINDER THAN 1" X 6" SUBFLR. TO EA. JST. FACE NAIL	3-8d
5. 2" SUBFLR. TO JOIST OF GIRDER BLIND AND FACE NAIL	2-16d
6. SOLE PLATE TO JOIST OR BLD'G.., FACE NAIL.	16d @ 16" O.C.
7. TOP PLATE TO STUD, END NAIL	2-16d
8. STUD TO SOLE PLATE	4-8d TOENAIL OR 2-16d, END NAIL
9. DOUBLE STUDS, FACE NAIL.	16d @ 24" O.C.
10. DOUBLE TOP PLATES, FACE NAIL	16D @ 16" O.C.
11. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	4-16d
12. CEILING JOIST TO PLATE, TOENAIL.	3-8d
13. CONTINUOUS HEADER TO STUD, TOENAIL	4-8d
14. CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL.	3-16d
15. CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
16. RAFTER TO TRUSSES TO PLATE, TOENAIL.	3-16d
17. 1" X 8" SHEATHING OR LESS TO EA. BEARING., FACE NAIL.	2-8D
18. WIDER THAN 1" X 8" SHEATHING TO EA. BEARING, FACE NAIL	3-8d
19. BUILT-UP CORNER STUDS.	16d @ 24" O.C.

CORROSION PROTECTION NOTE:

CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER. OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER WILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED.

NO.	REVISIONS

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 4, 2021

AS AN INSTRUMENT OF SERVICE, THESE DOCUMENTS ARE NOT FINAL AND VALID FOR USE UNLESS THEY ARE SEALED, 'WET' SIGNED AND DATED.

A PROPOSED REMODEL RESIDENCE FOR:
TOLIAO RESIDENCE
1357 ABBOTT AVE. CAMPBELL, CA 95008

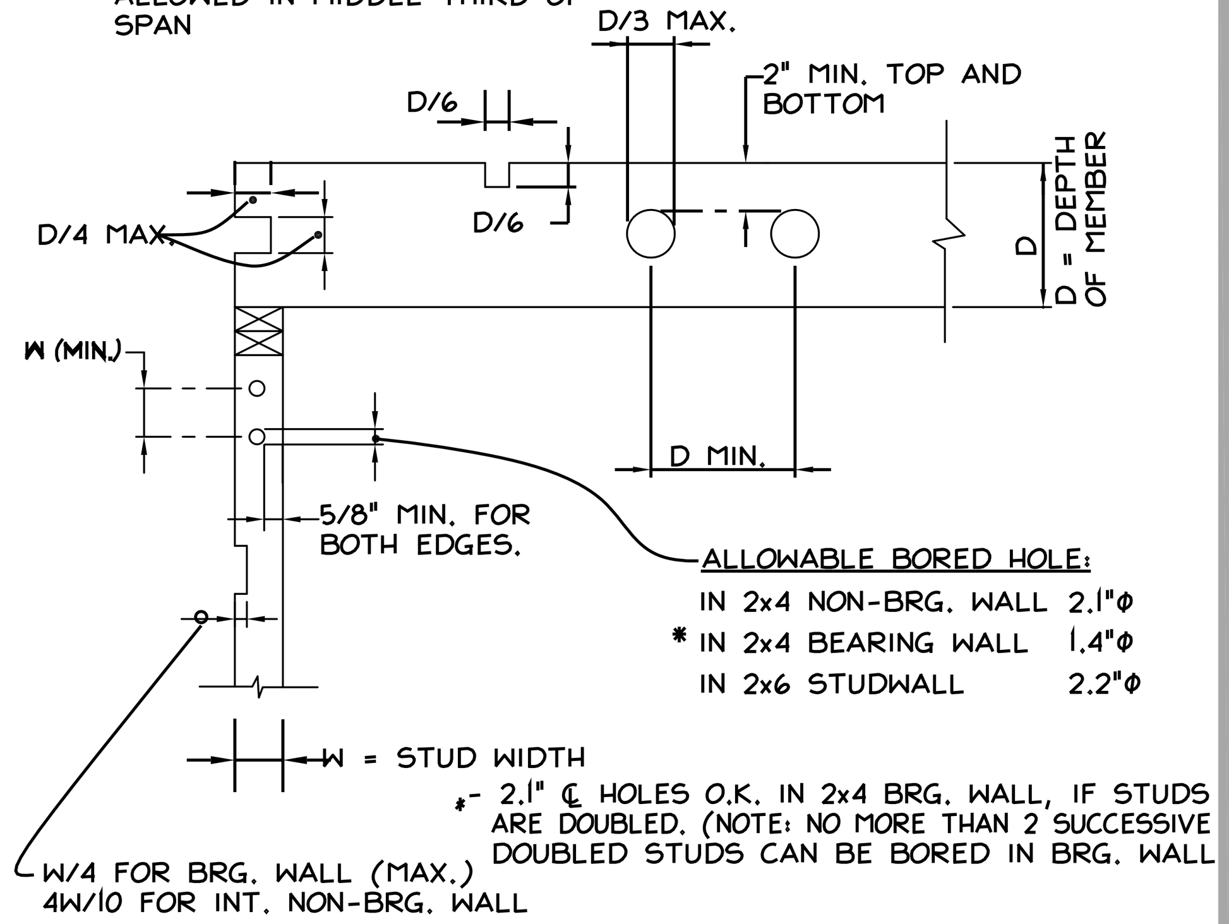
DRAWINGS PROVIDED BY:
CLEAR OAK DESIGNS, INC.
1723 ROGER AVE, SUITE A
SAN JOSE, CA 95112

SCALE	
NOT TO SCALE, U.N.O.	
DRAWN	CHECKED RC
PROJ. NO. 20-144	DATE 1-4-21
DRAWING NO. SD-1	
SHEET(S)	

20171-24X36

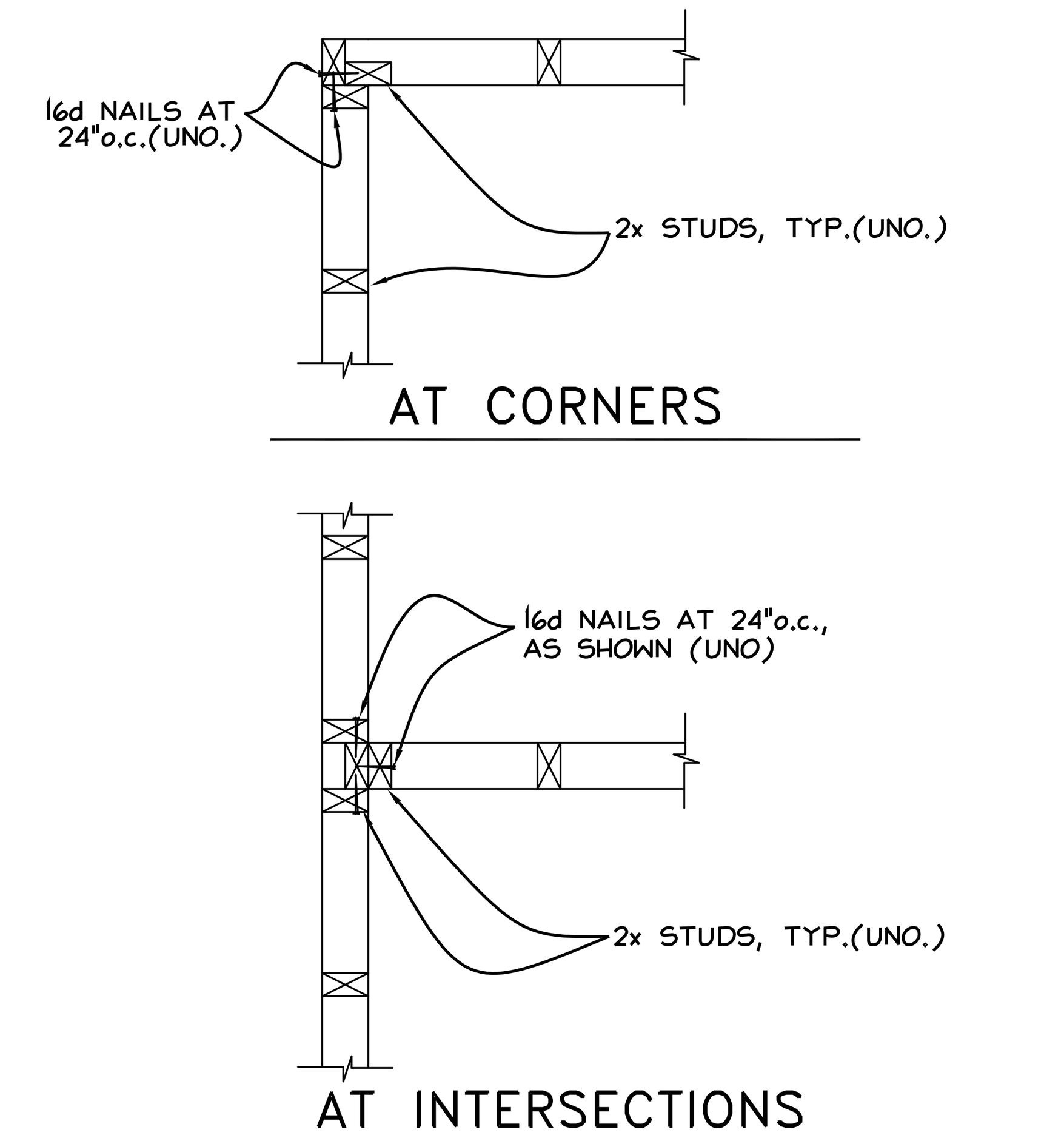
NOTES:

1. HOLES AND NOTCHES ARE NOT PERMITTED IN JOISTS WHERE "D" = 4" OR LESS.
2. NO NOTCHES (TOP OR BOTTOM) ALLOWED IN MIDDLE THIRD OF SPAN



NOTE
MAY NOT BE USED AT GLU-LAM BEAMS OR ANY PRE-FABRICATED TRUSS OR JOIST MEMBERS WITHOUT PRIOR APPROVAL BY PROJECT ENGINEER AND APPLICABLE TRUSS CO.

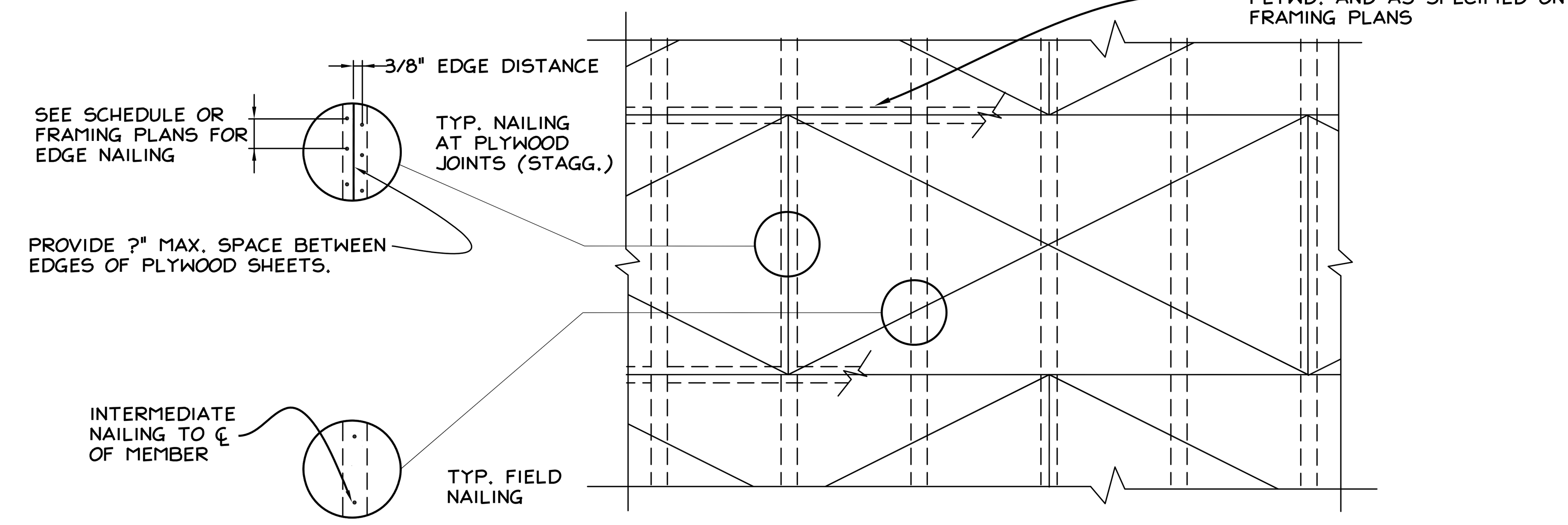
JOIST AND STUD CUTOUT DET. 1



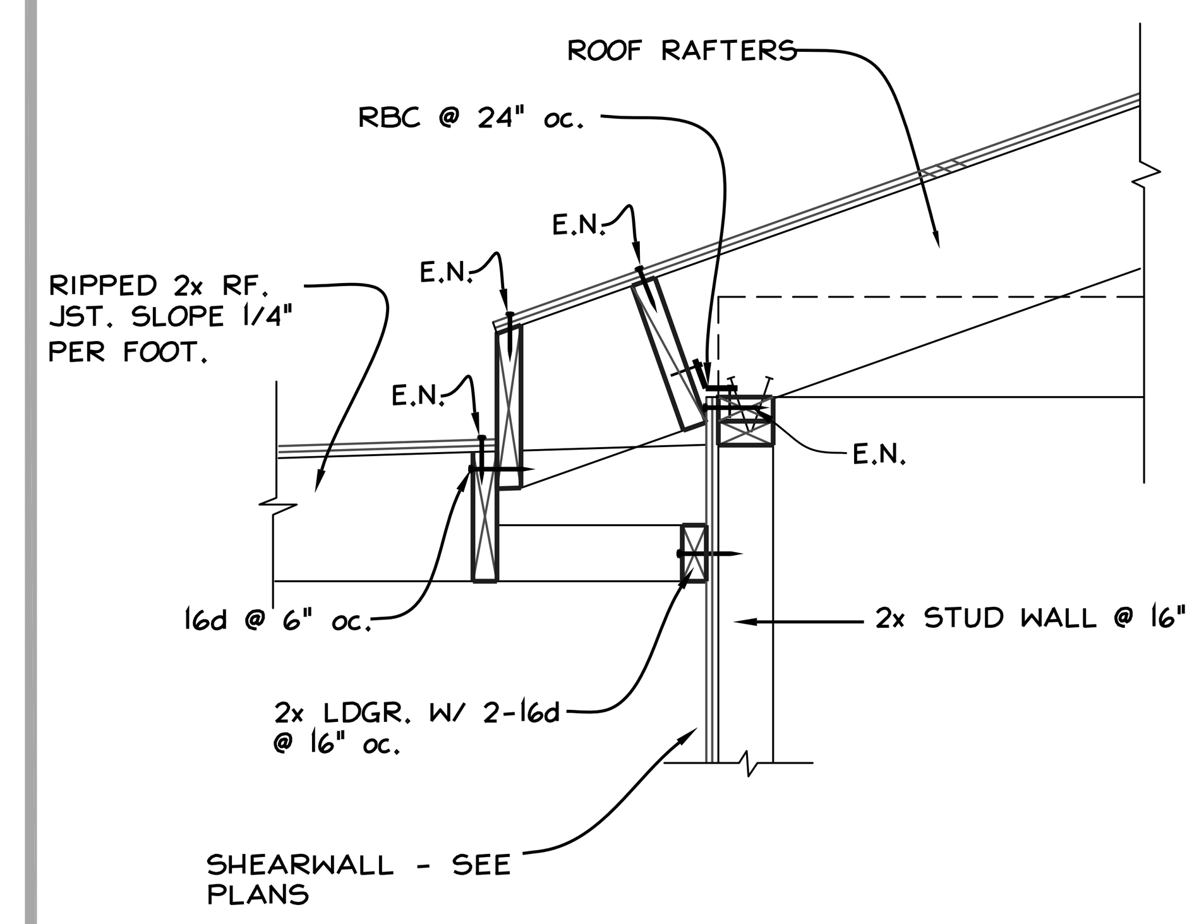
TYPICAL STUD LOCATIONS (U.N.O.) 2

PLYWOOD SHEATHING NOTES:

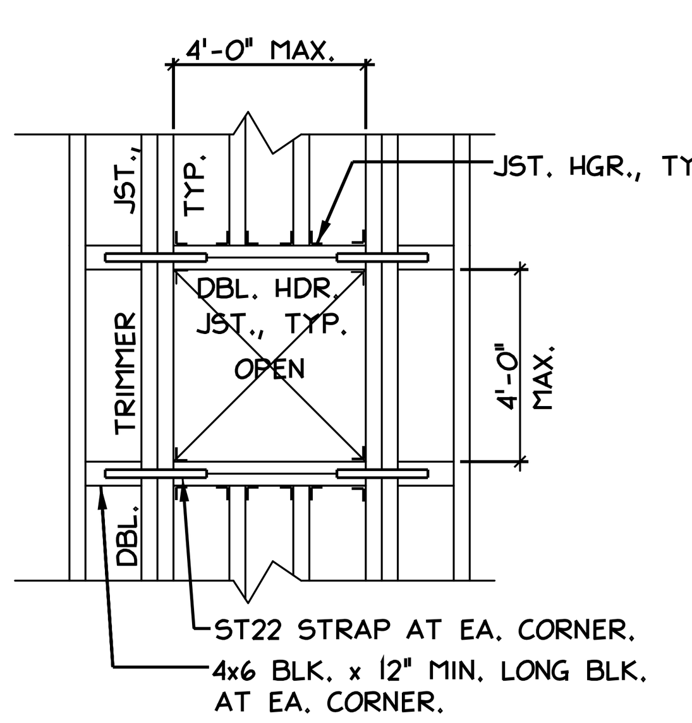
1. ALL NAILS SHALL BE COMMON NAILS OR HOT DIPPED GALVANIZED BOX NAILS
2. INDIVIDUAL PIECES OF PLYWOOD SHALL NOT BE LESS THAN 24" IN THE LEAST DIMENSION NOR LESS THAN 4'-0" SQ. TOTAL AREA.
3. ALL PLYWOOD MUST BE APA RATED.
4. PRE-DRILL HOLES WHERE PLYWOOD OR FRAMING TENDS TO SPLIT.
5. PROVIDE EDGE NAILING ALONG ALL JOISTS, TRUSSES, BEAMS, COLLECTORS AND BLOCKING OVER OR IN LINE WITH SHEAR WALLS. (2 - ROWS REQUIRED AT EACH OF THESE LOCATIONS.)
6. DO NOT OVER DRIVE NAILS INTO PLYWOOD SHEATHING, ANYMORE THAN TO PROVIDE THE NAIL HEAD FLUSH WITH THE PLYWOOD SURFACE.
7. OSB (ORIENTED STRAND BOARD) APA RATED BOARD MAYBE USED IN LIEU OF PLYWOOD WITH BUILDING OWNERS OR ARCHITECTS APPROVAL. HOWEVER, OSB BOARDS SHALL NOT BE USED ON EXTERIOR DECKS OR BALCONIES. OSB BOARDS SHALL BE RATED EQUAL OR BETTER THAN THE PLYWOOD SPECIFIED.



PLYWOOD SHEATHING DETAIL 4



SHEAR TRANSFER DET. 5



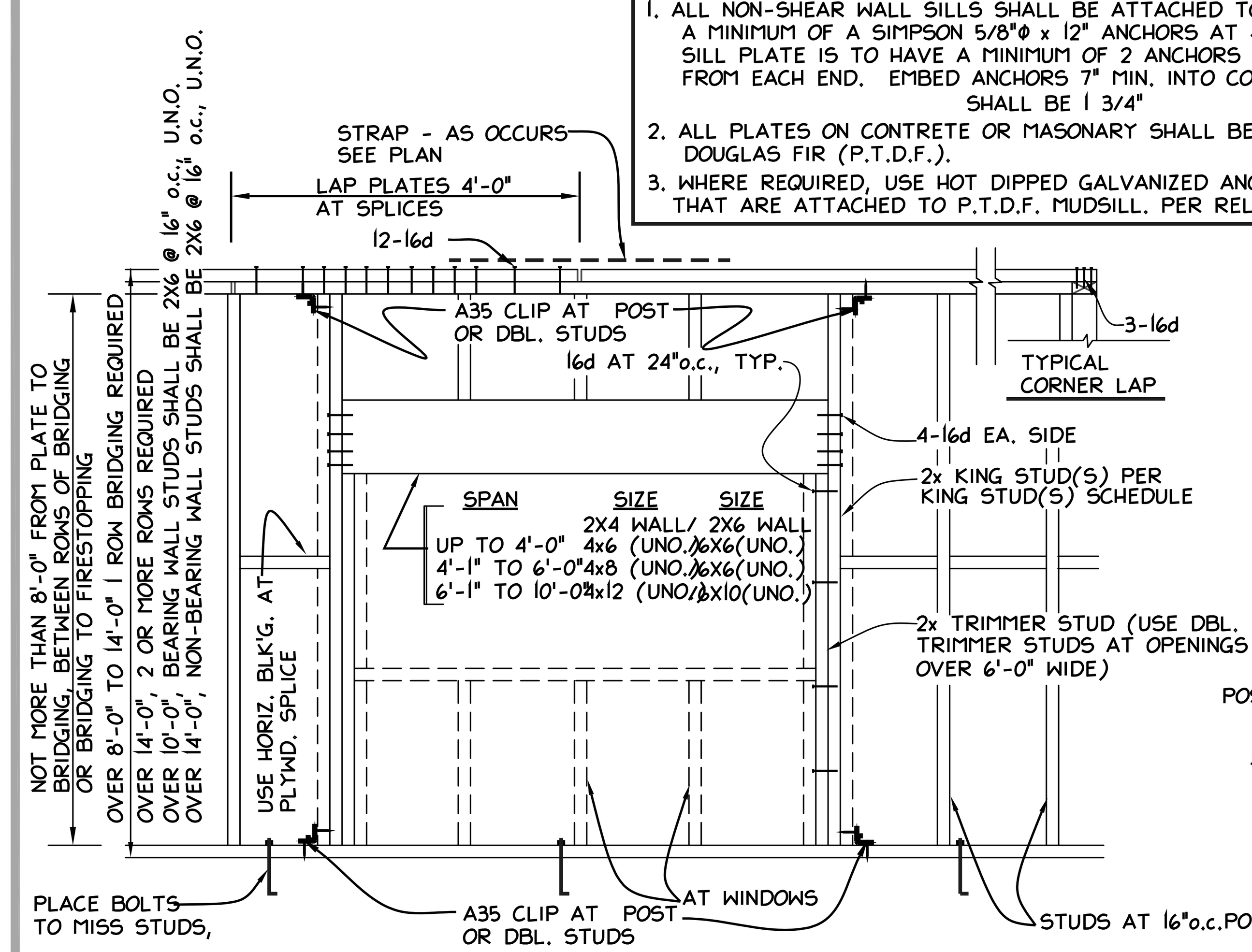
NOTES:

1. PROVIDE PLYWD. EDGE NAIL'G TO TRIMMER JST., HDR. JST. AND CORNER BLOCKS.
2. DETAIL IS APPLICABLE TO MAX. DIMEN. SHOWN.

TYP. ROOF FRAMED OPNG. 4'-0" MAX. 6

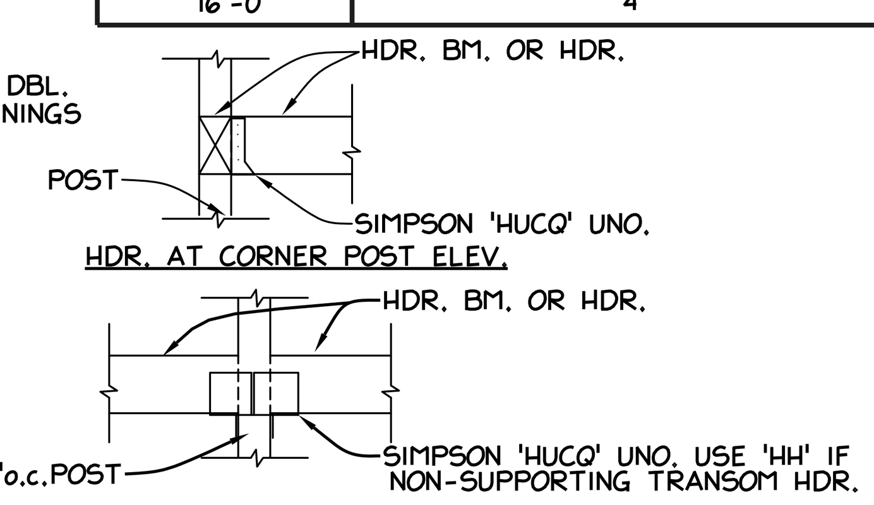
SILL ANCHORS AND P.T.D.F. MUDSILLS:

1. ALL NON-SHEAR WALL SILLS SHALL BE ATTACHED TO THE FOUNDATION WITH A MINIMUM OF A SIMPSON 5/8"φ x 12" ANCHORS AT 4'-0" O.C. (U.N.O.) EACH PIECE OF SILL PLATE IS TO HAVE A MINIMUM OF 2 ANCHORS PER PIECE 12" MAXIMUM FROM EACH END. EMBED ANCHORS 7" MIN. INTO CONCRETE. MIN. EDGE DISTANCE SHALL BE 1 3/4"
2. ALL PLATES ON CONTRETE OR MASONARY SHALL BE PRESSURE TREATED DOUGLAS FIR (P.T.D.F.).
3. WHERE REQUIRED, USE HOT DIPPED GALVANIZED ANCHOR BOLTS, NAILS AND HARDWARES THAT ARE ATTACHED TO P.T.D.F. MUDSILL, PER RELEVANT CITY CODE REQUIREMENTS.

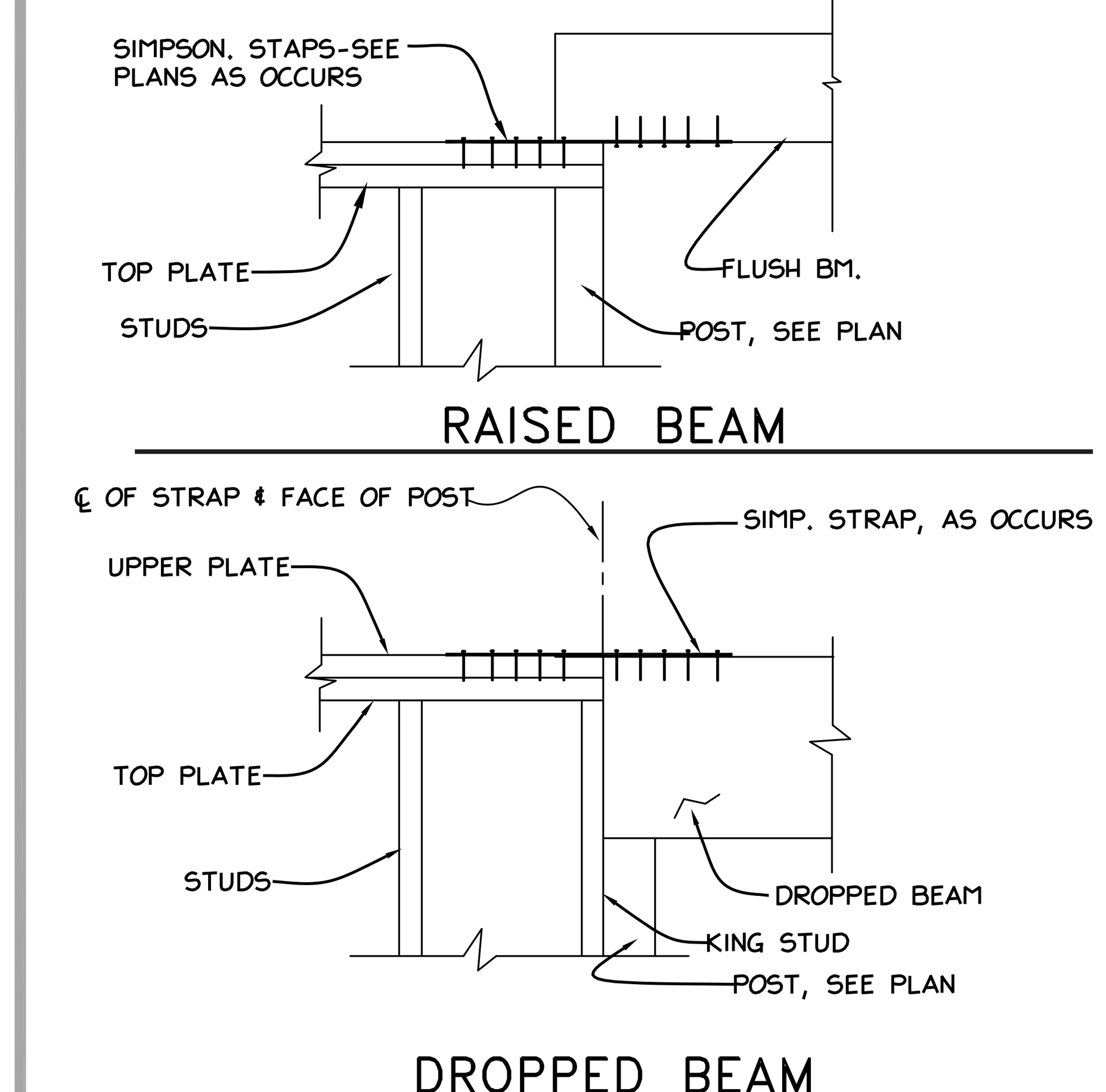


KING STUD(S) SCHEDULE
MINIMUM NUMBER OF FULL HEIGHTS KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

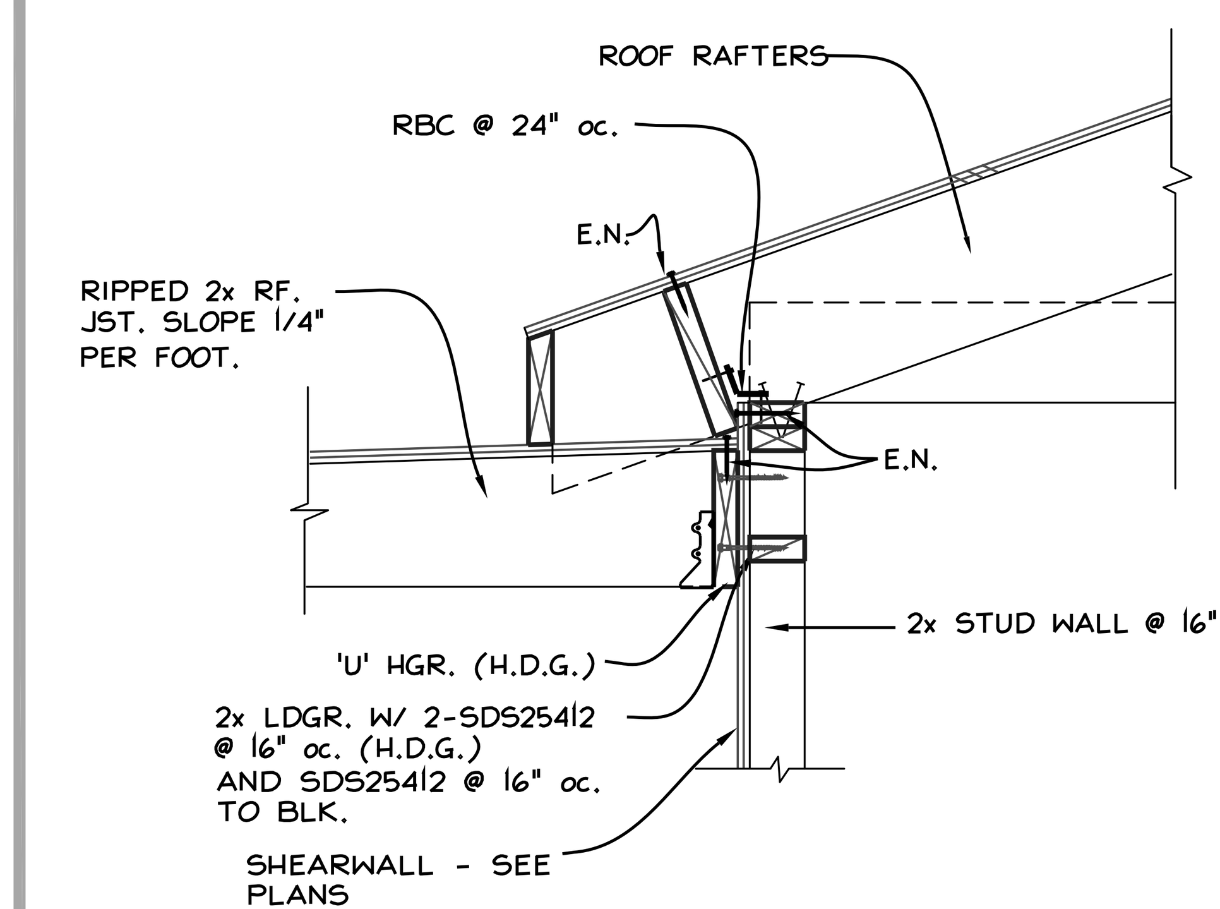
HEADER SPAN (FEET)	MAXIMUM STUD SPACING (INCHES) [PER TABLE R602.3(5)] 16
≤ 3'-0"	1
4'-0"	1
8'-0"	2
14'-0"	3
16'-0"	4



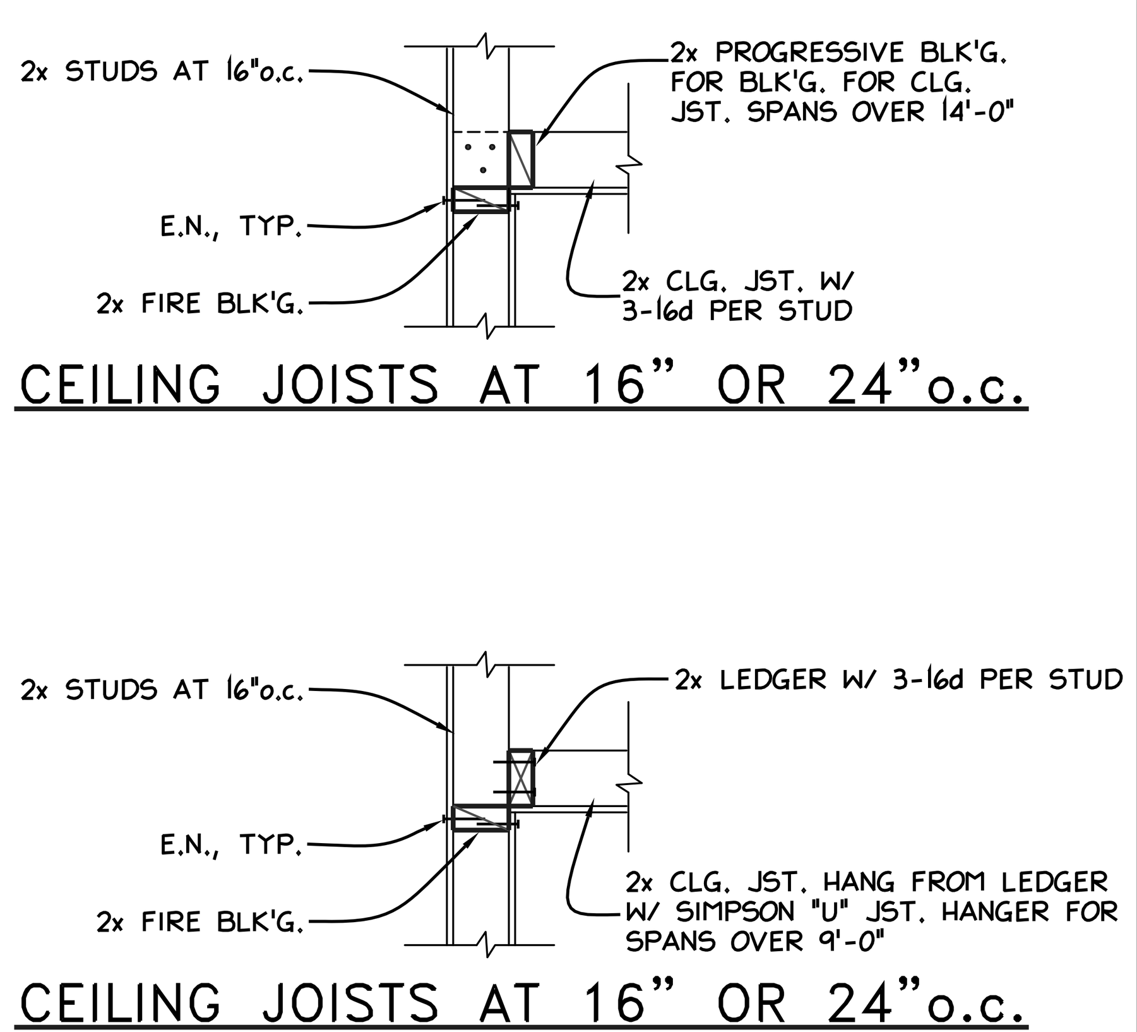
TYP. FRAMED WALL OPENING (UNO.) 8



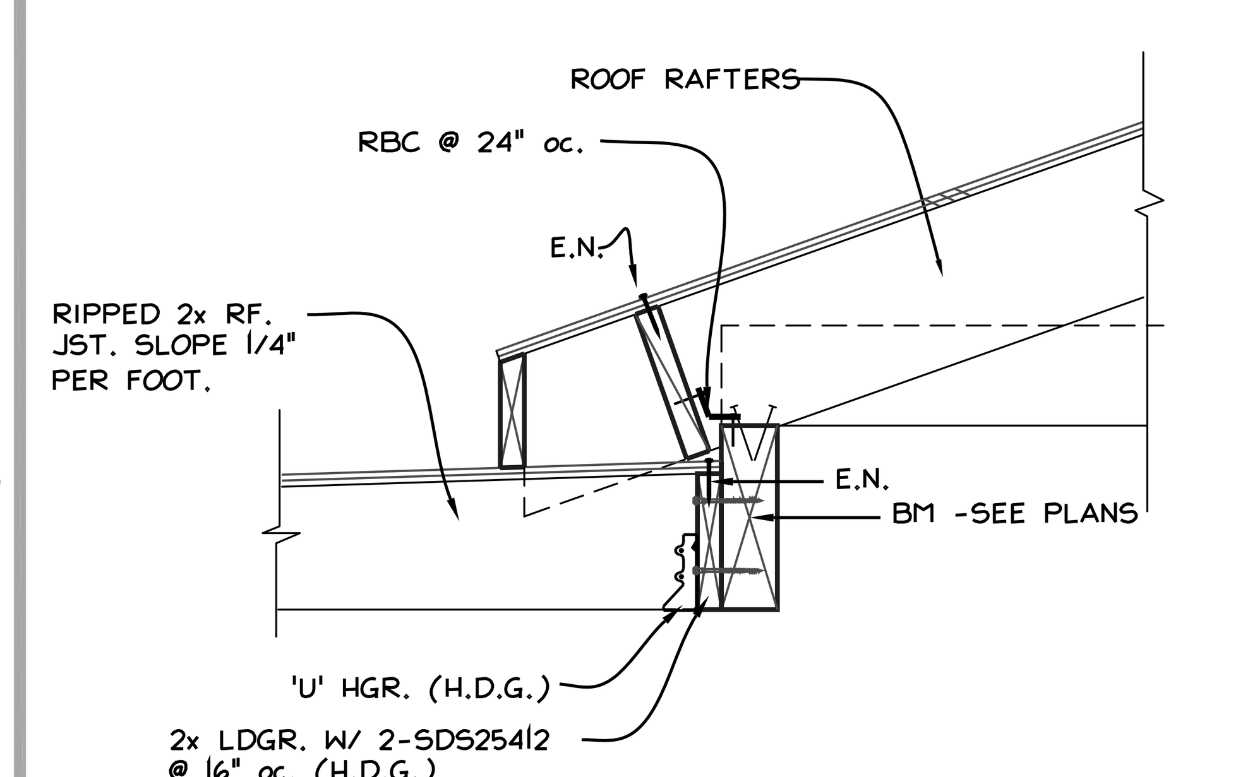
TYP. STRAP TO BEAM 9



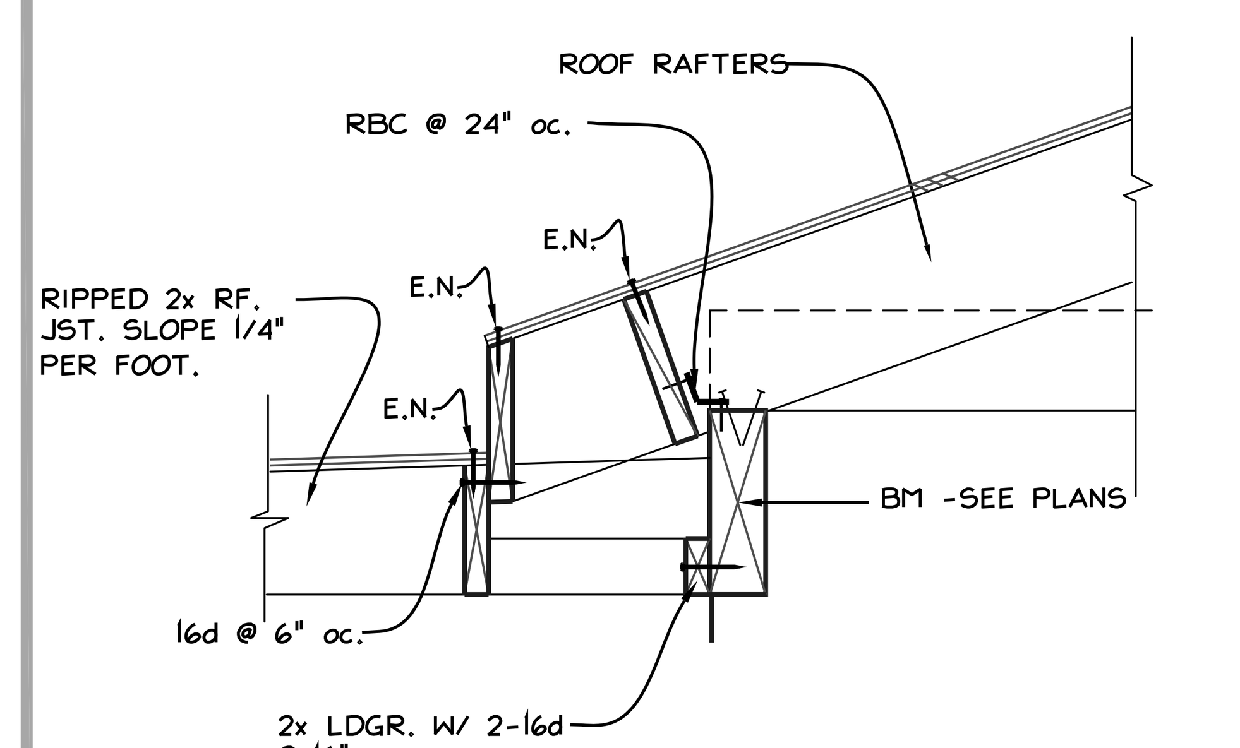
SHEAR TRANSFER DET. 10



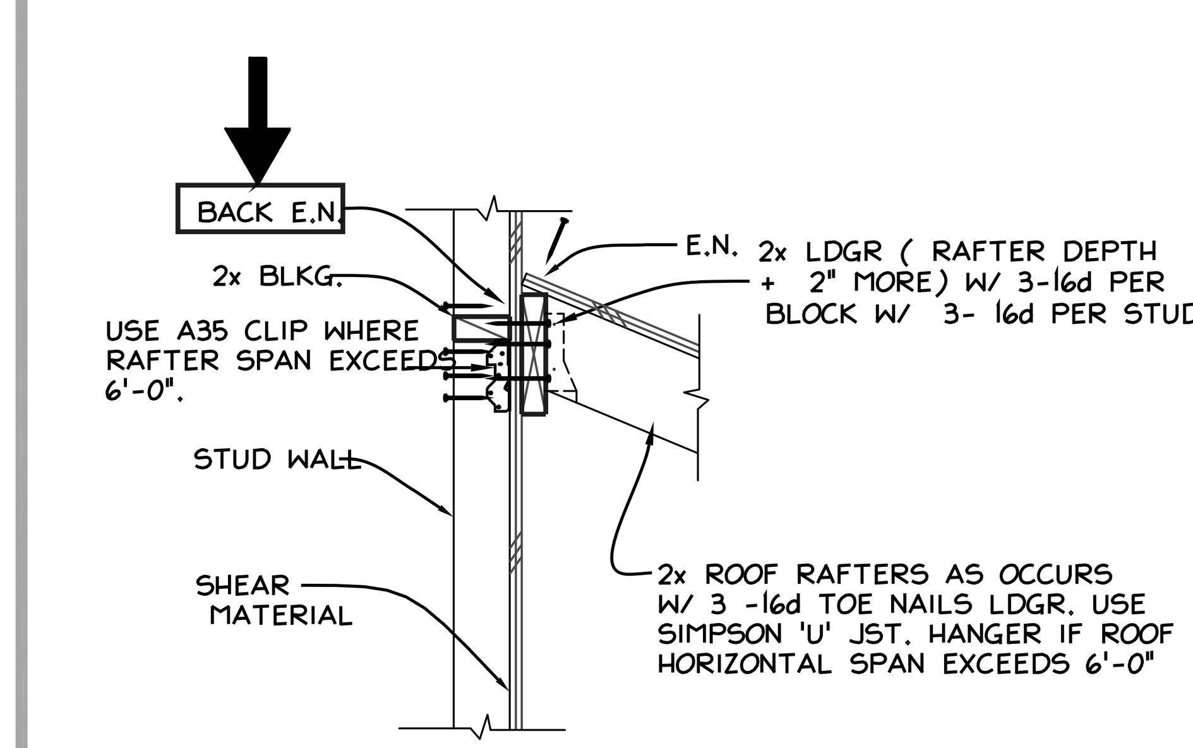
CEILING JOIST TO BALLOON FRAME WALL 11



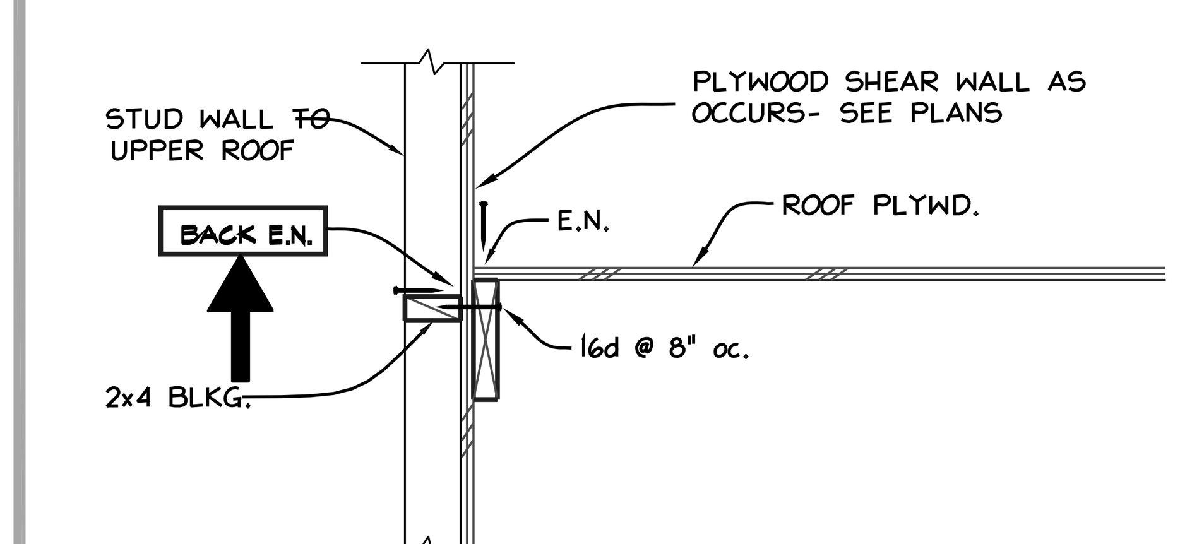
SHEAR TRANSFER DET. 12



SHEAR TRANSFER DET. 13



LOW ROOF CONNECTION 14



LOW ROOF CONNECTION 15

NO. REVISIONS

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 4, 2021

A PROPOSED REMODEL RESIDENCE FOR:
TOLIAO RESIDENCE
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DRAWINGS PROVIDED BY:
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1723 ROGER AVE, SUITE A
SAN JOSE, CA 95112

SCALE NOT TO SCALE, U.N.O.

DRAWN	CHECKED
	RC
PROJ. NO. 20-144	DATE 1-4-21

DRAWING NO.
SD-2
SHEET(S)

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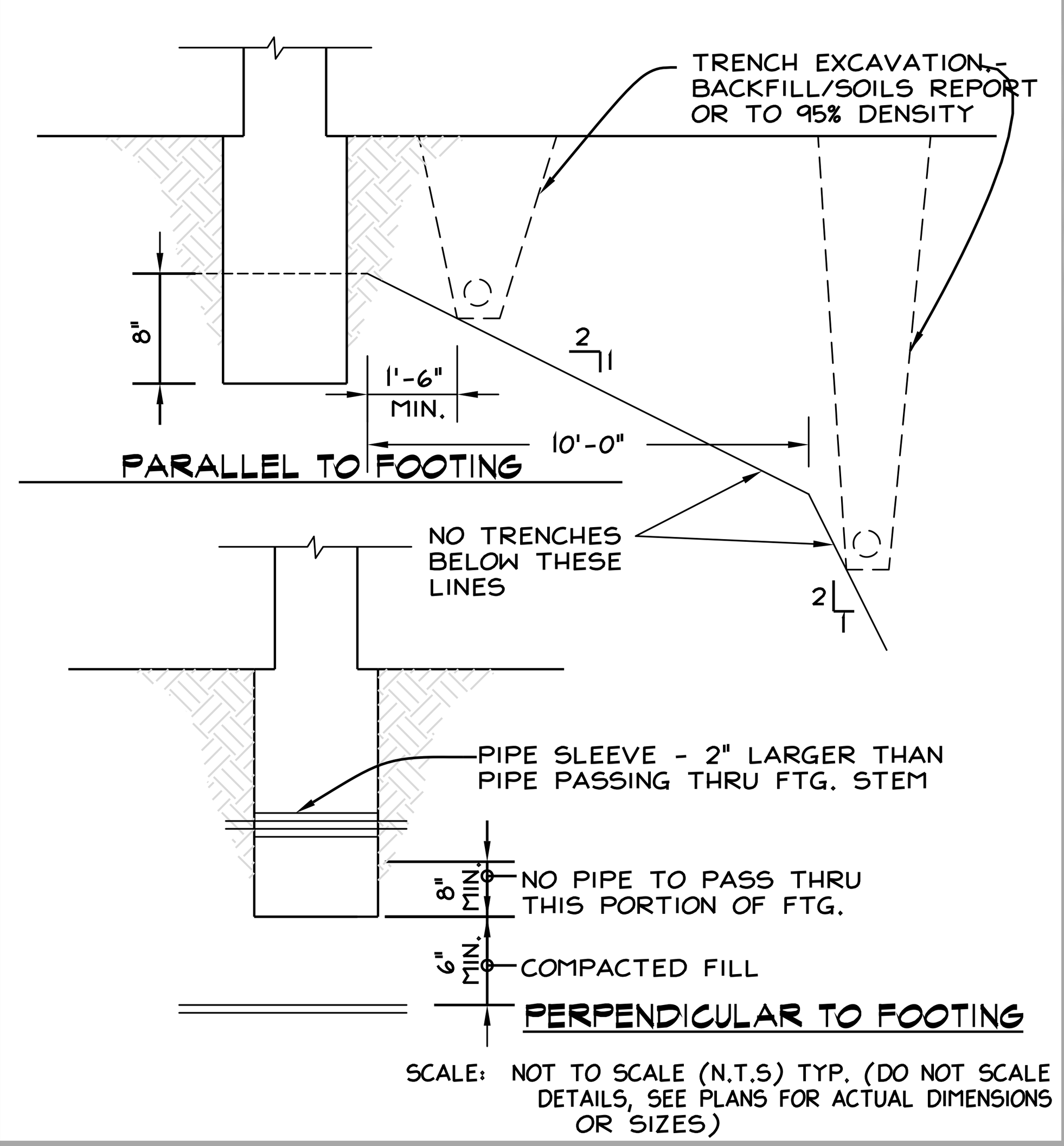
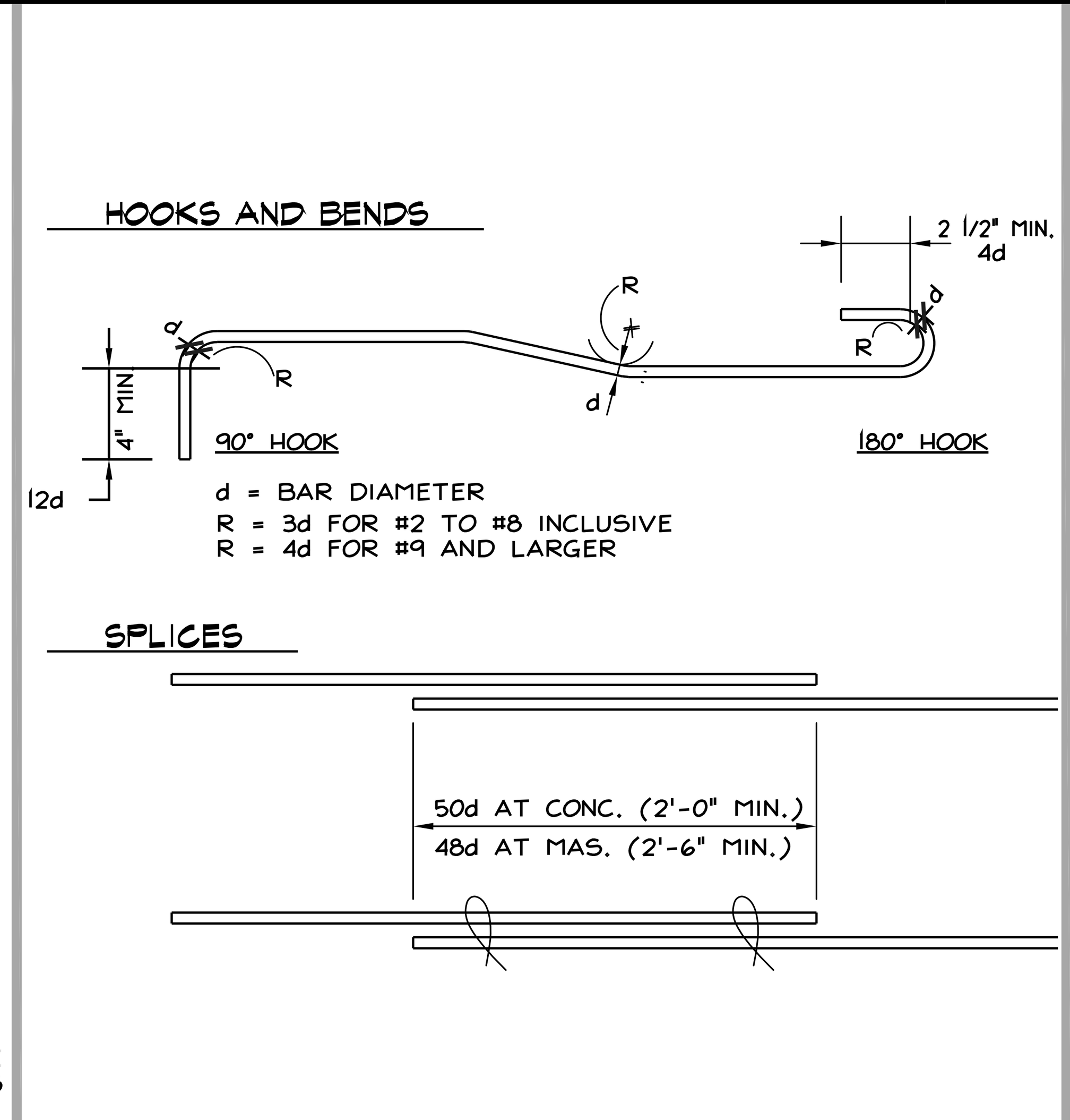
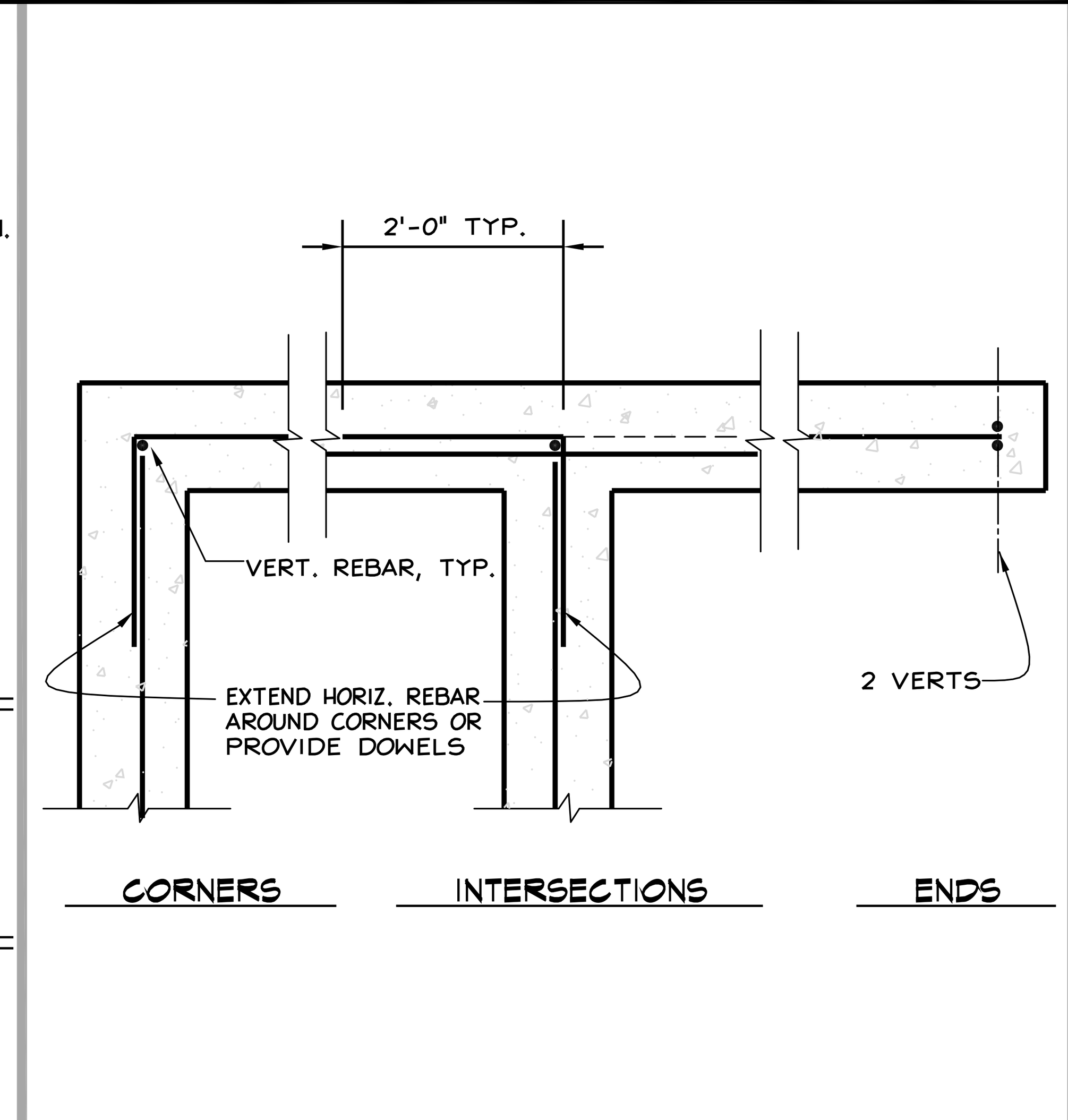


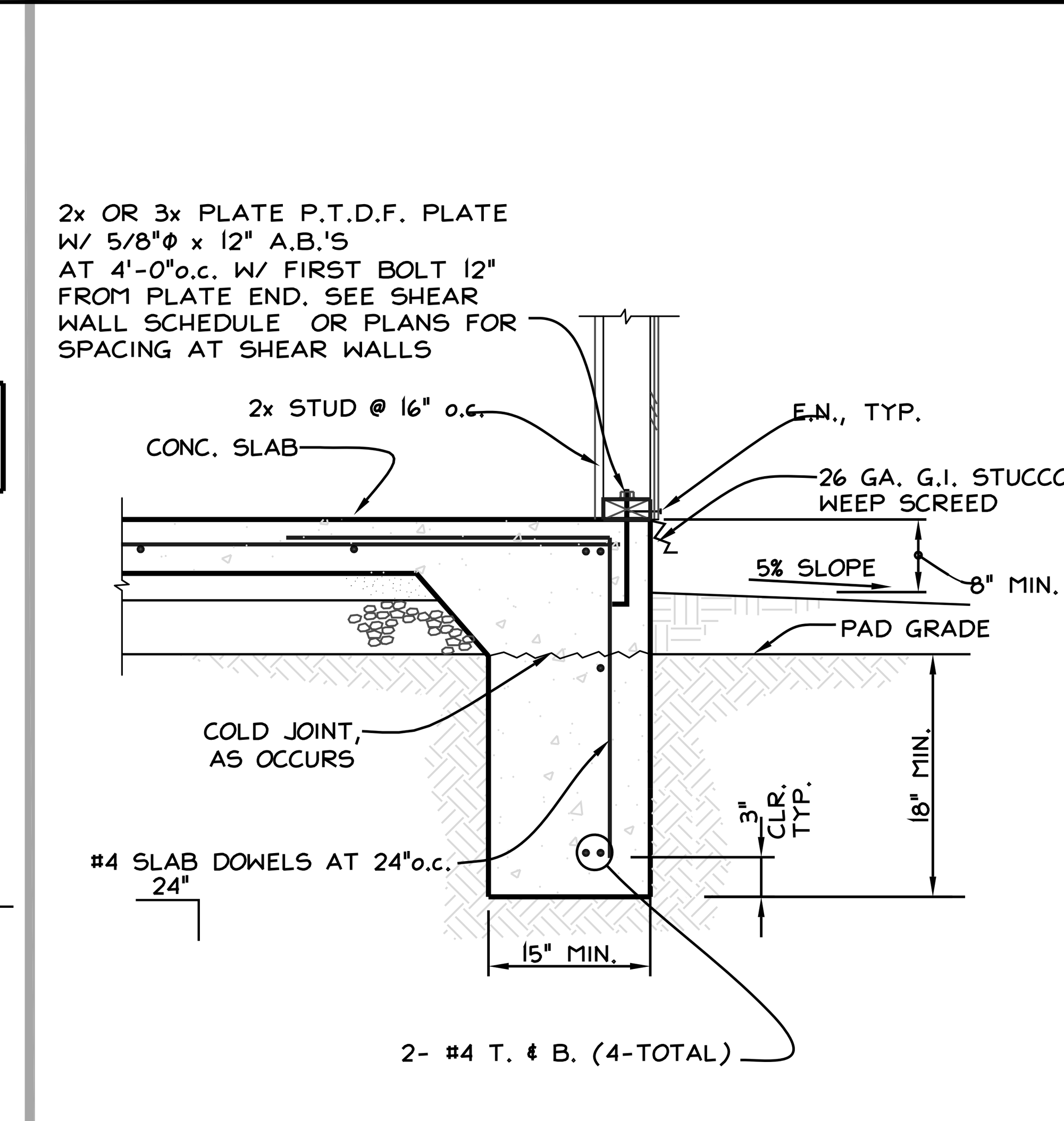
TRENCH DETAIL 1



TYP. REINF. BAR DET. 2

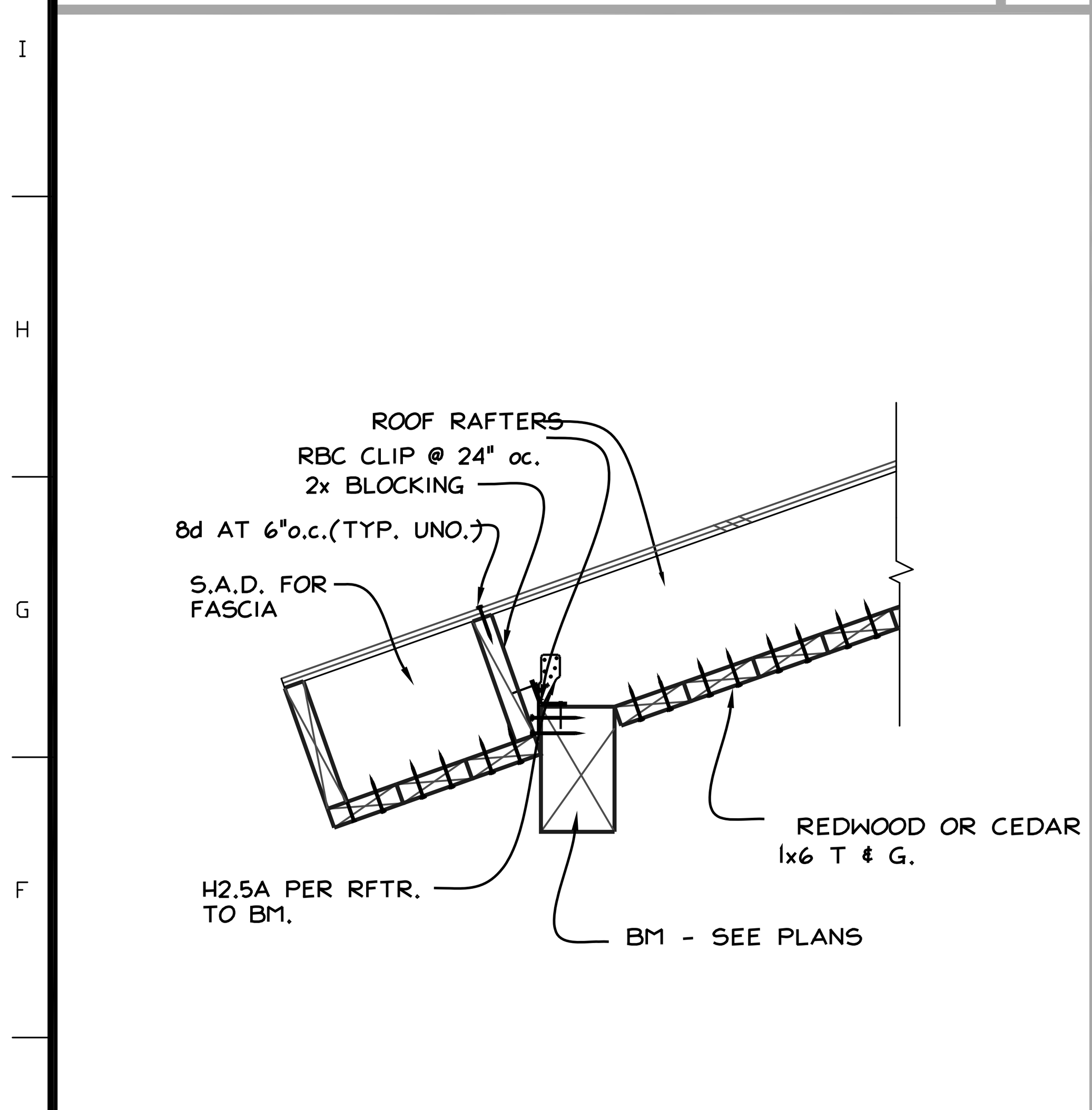


TYP. REINF. AT FTG. AND WALL CORNERS AND INTERSECTIONS 3

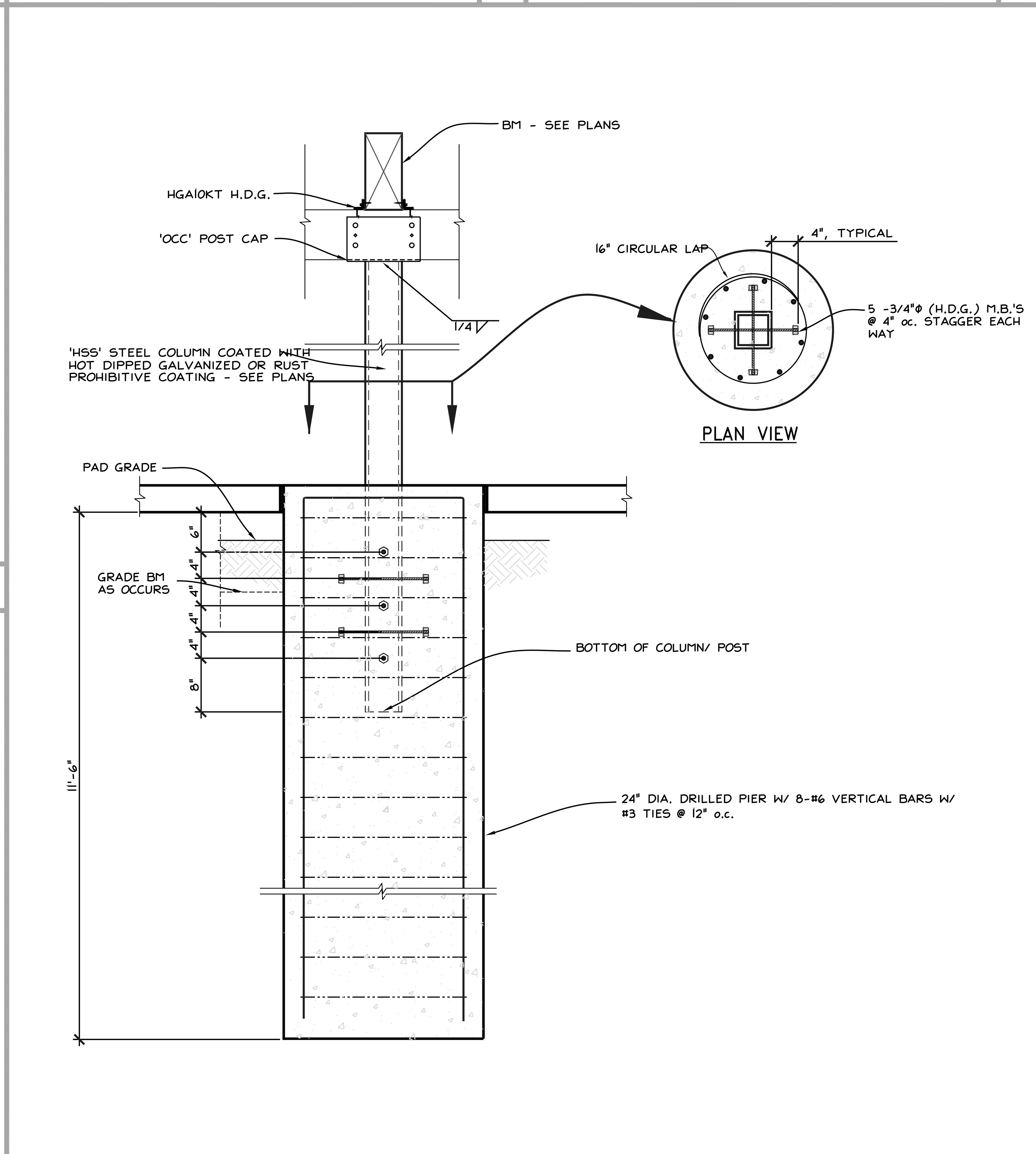


TYP. EXT. FTG. DET. 4

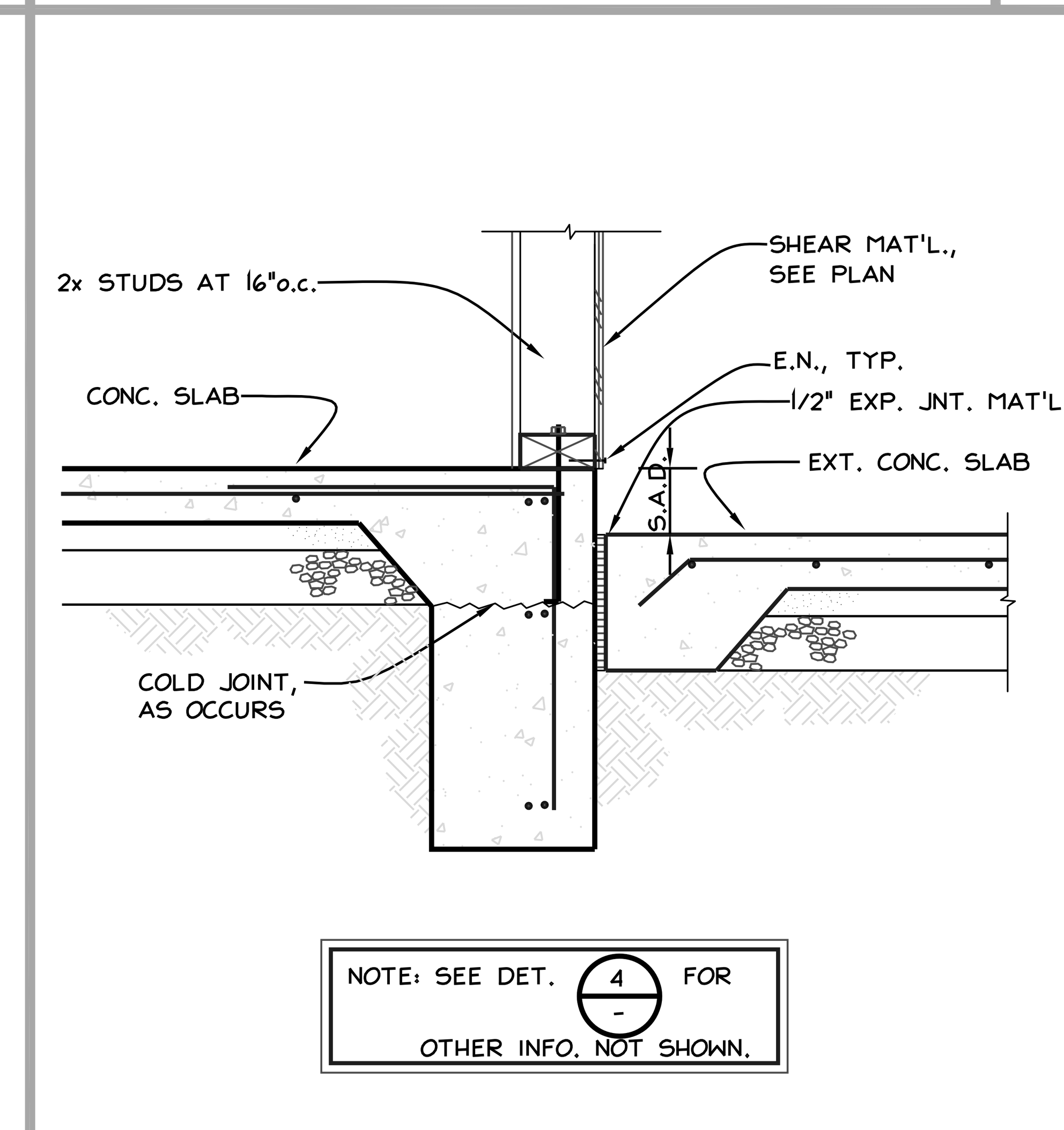
5



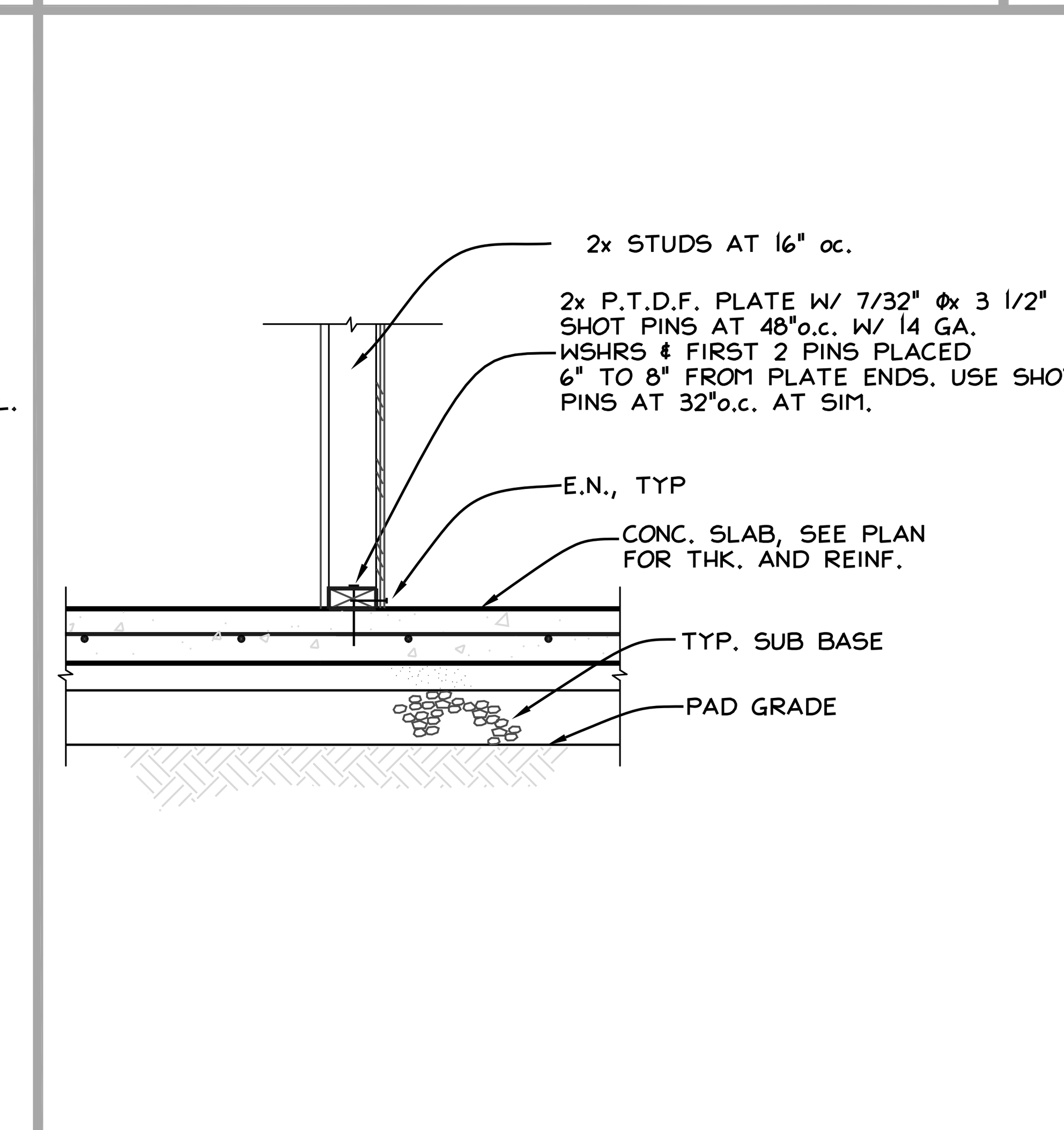
TYPICAL RIDGE BEAM FRMG. 6



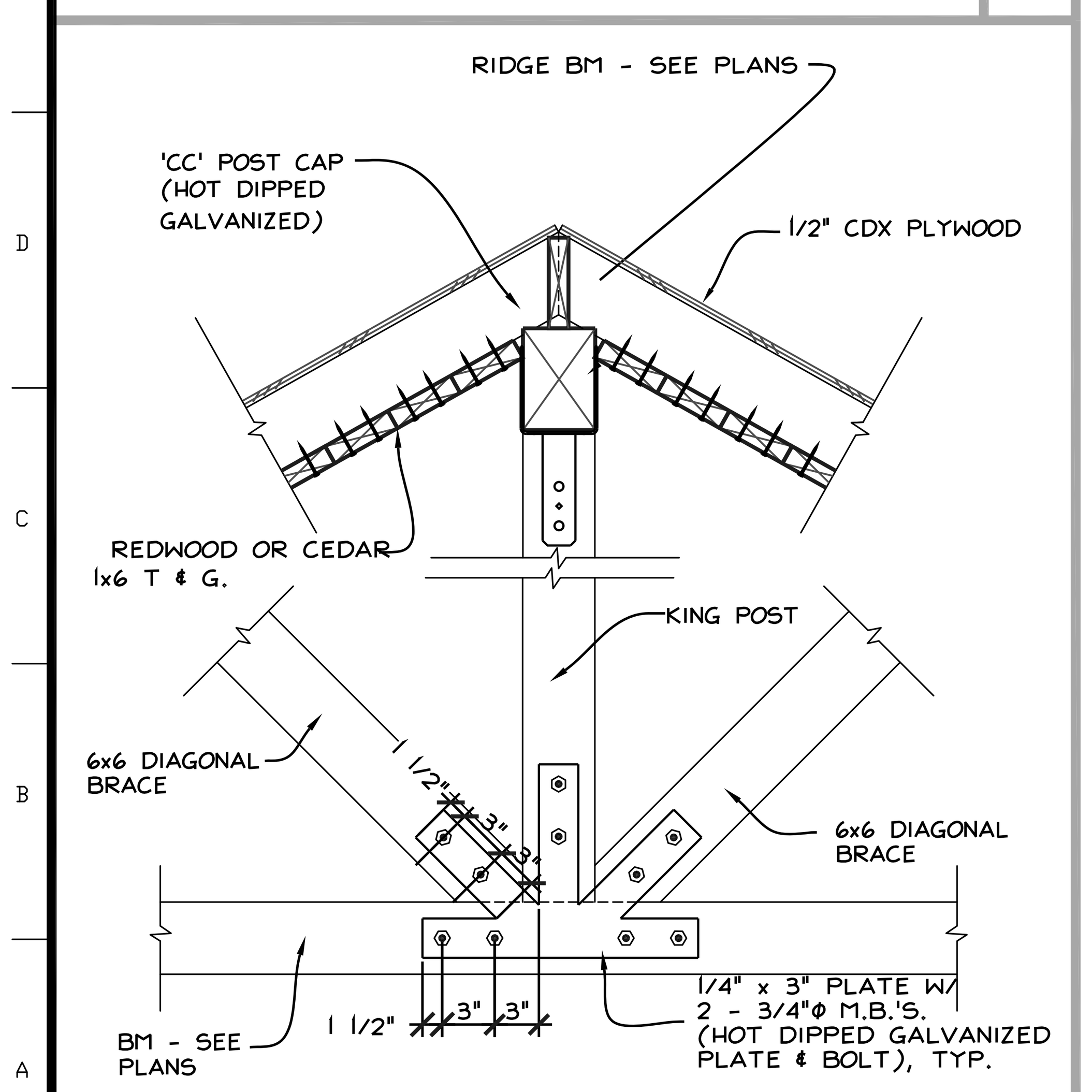
LATERL BRACE ISOLATED COLUMN SUPPORT 13



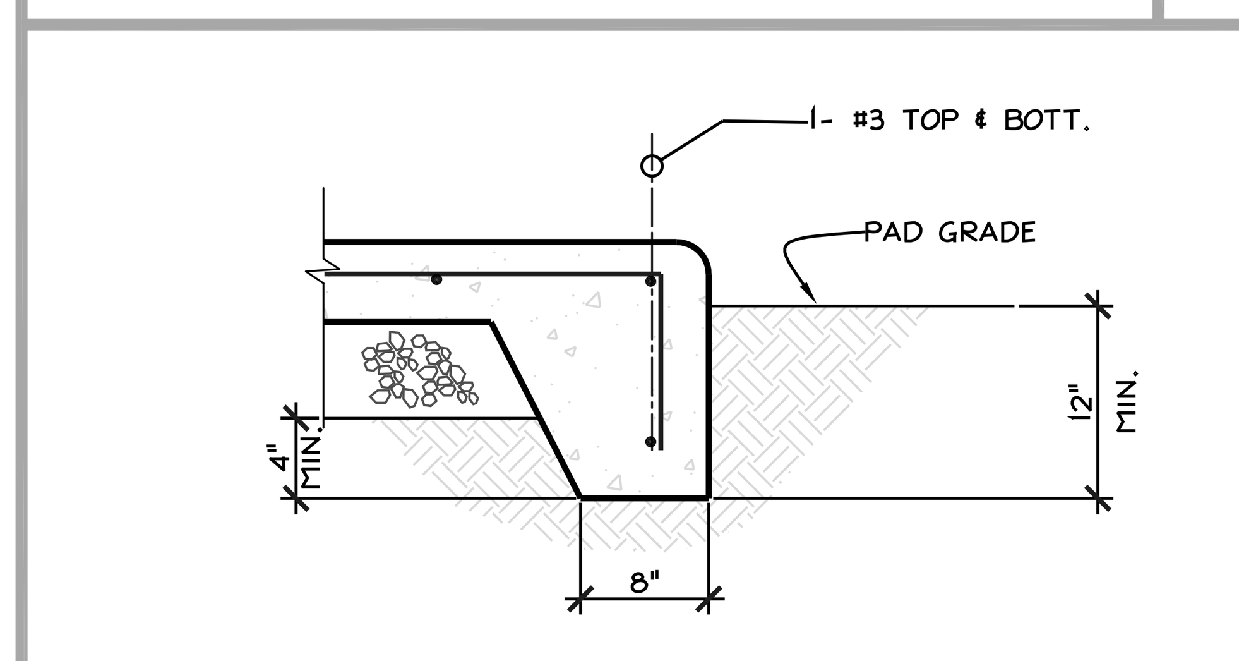
TYP. FTG./ SLAB DET. 9



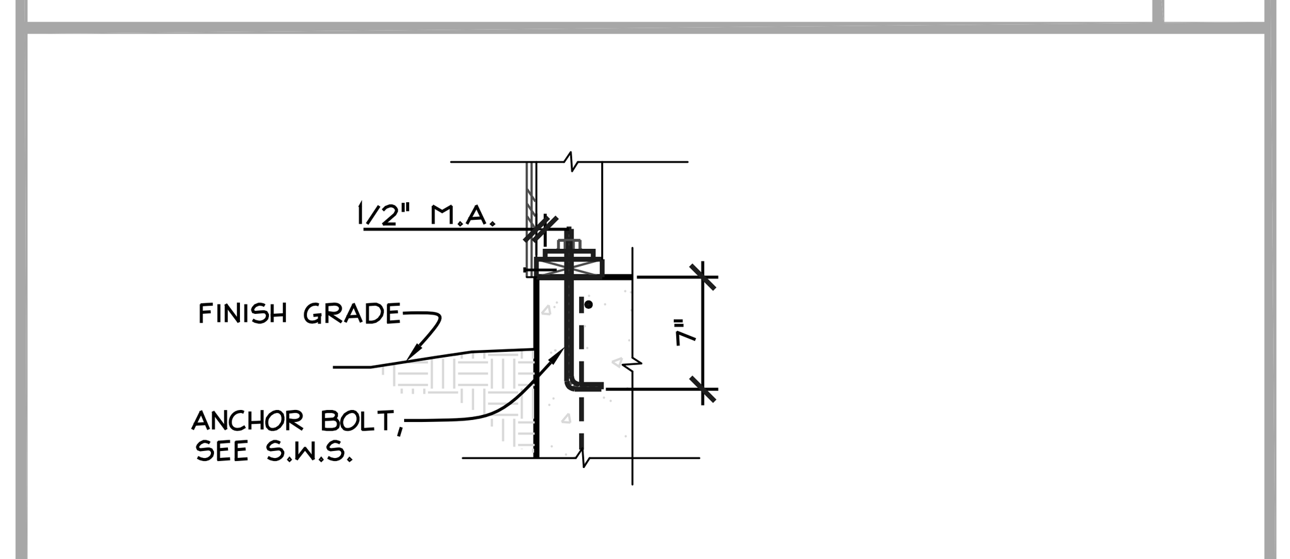
TYPICAL INTERIOR NON-BEARING WALL ANCHORAGE 10



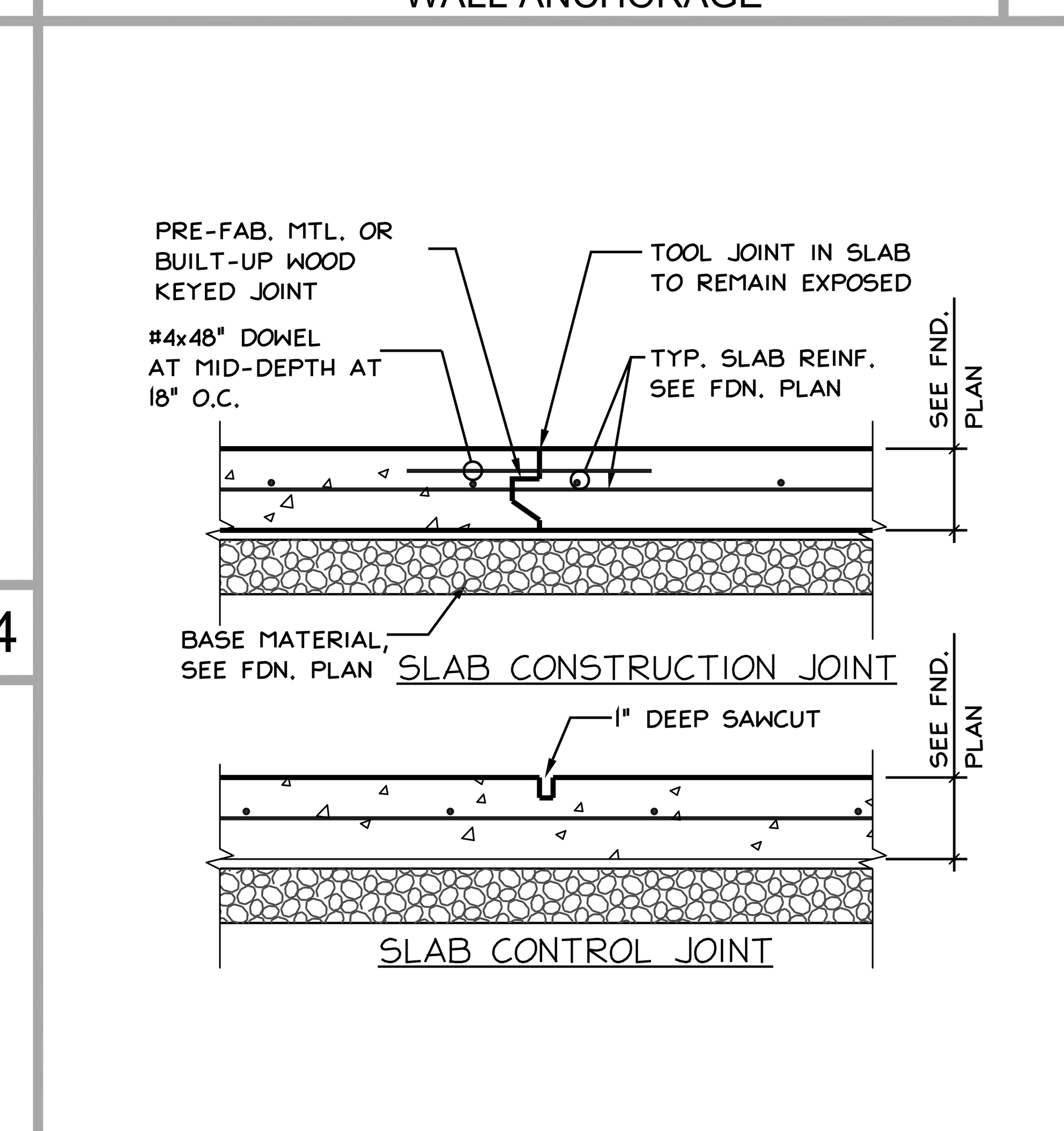
TYPICAL RIDGE BEAM FRMG. 11



TURNDOWN EDGE 14



ANCHOR BOLT DET. 15



SLAB JOINTS 16

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SHEET(S)

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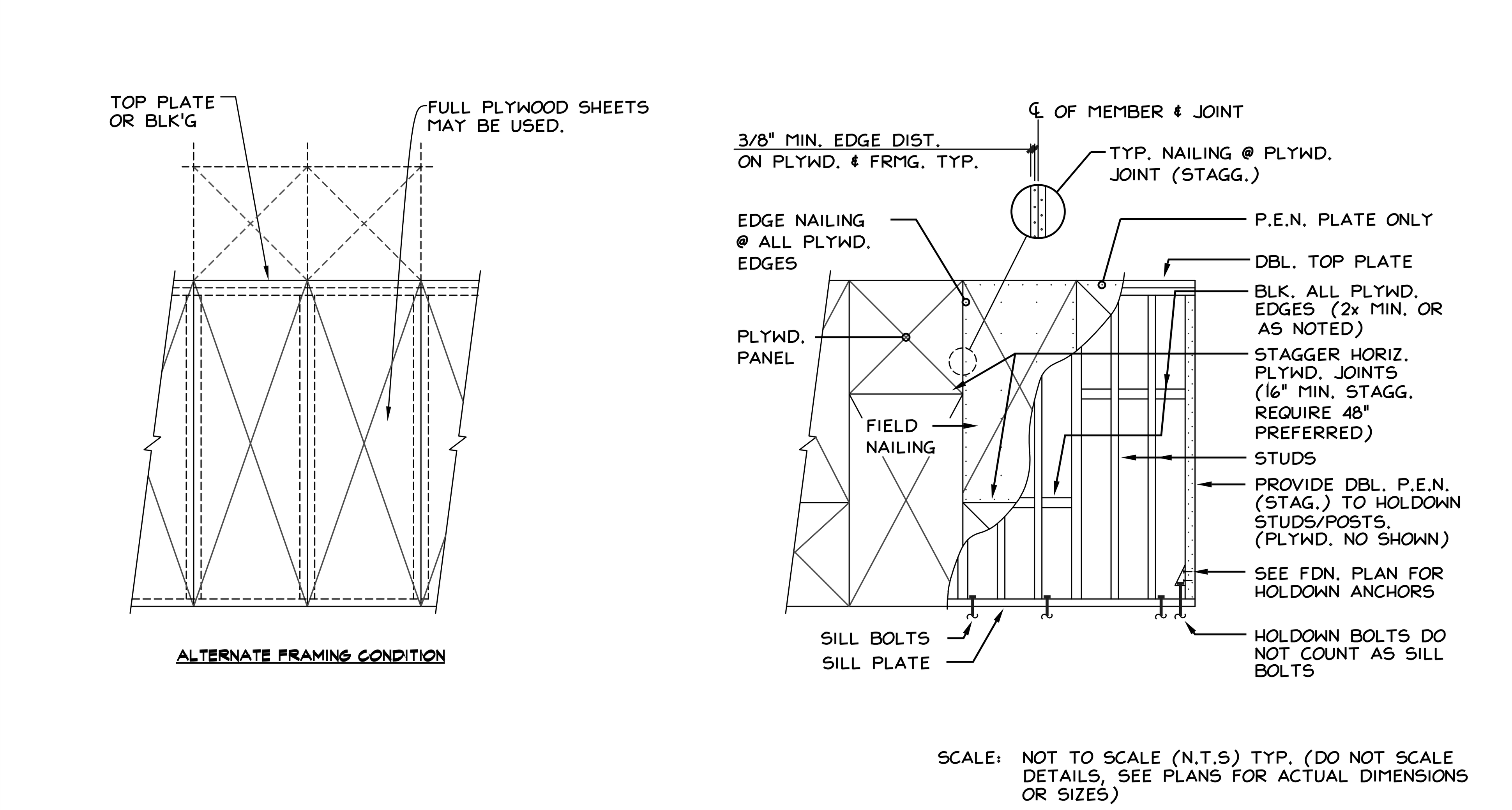
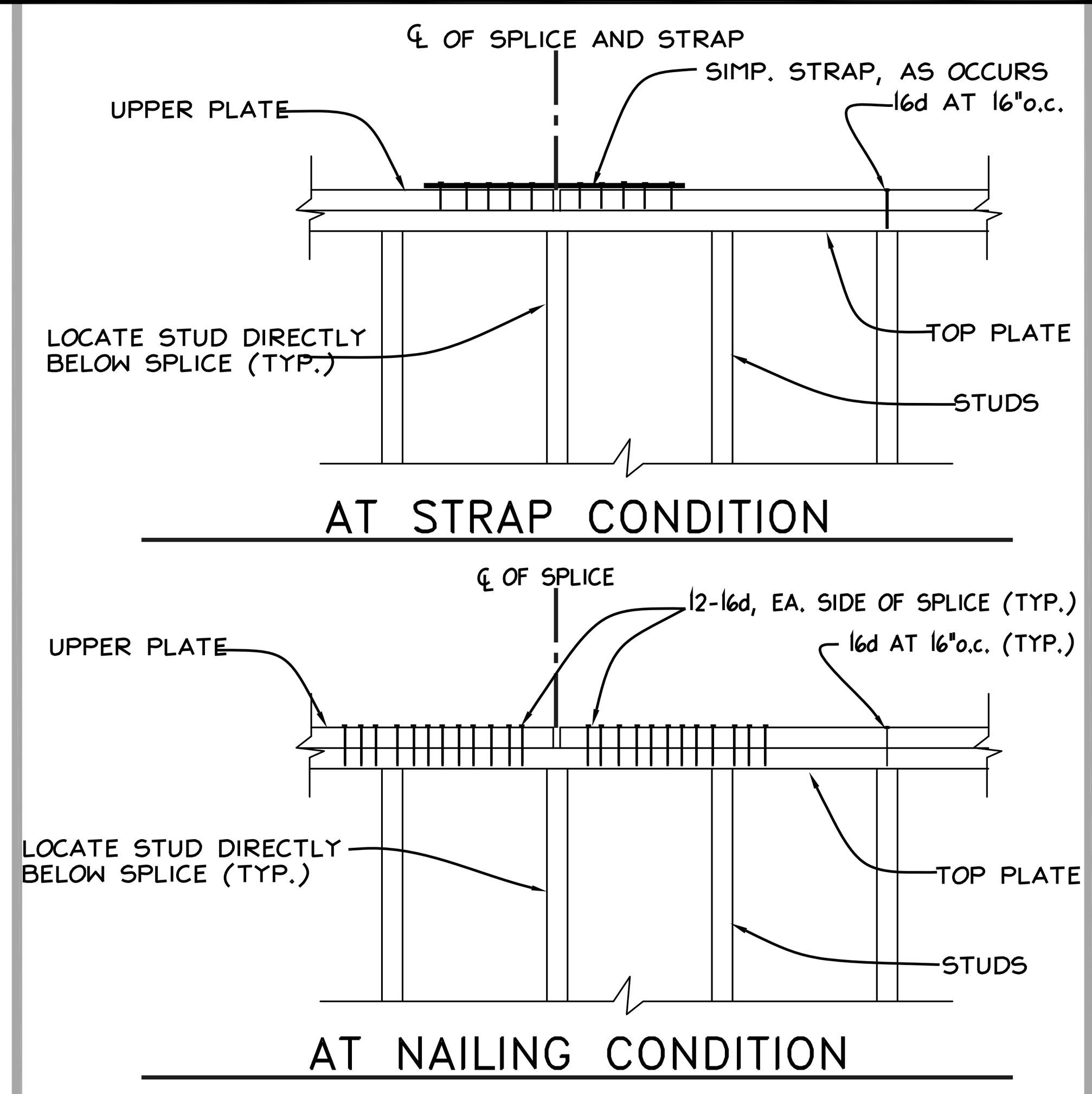
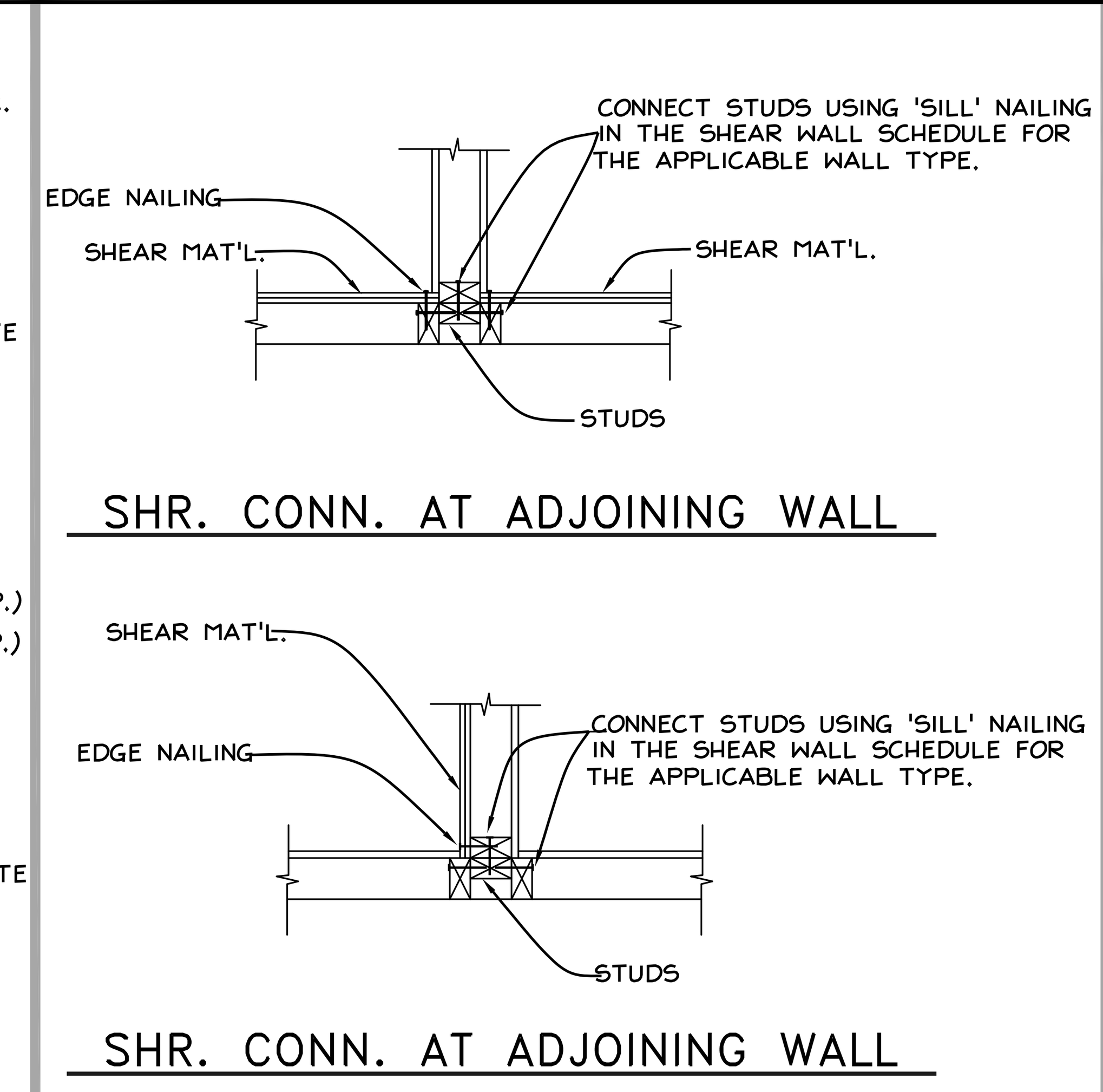


PLYWOOD SHEAR WALLS 2



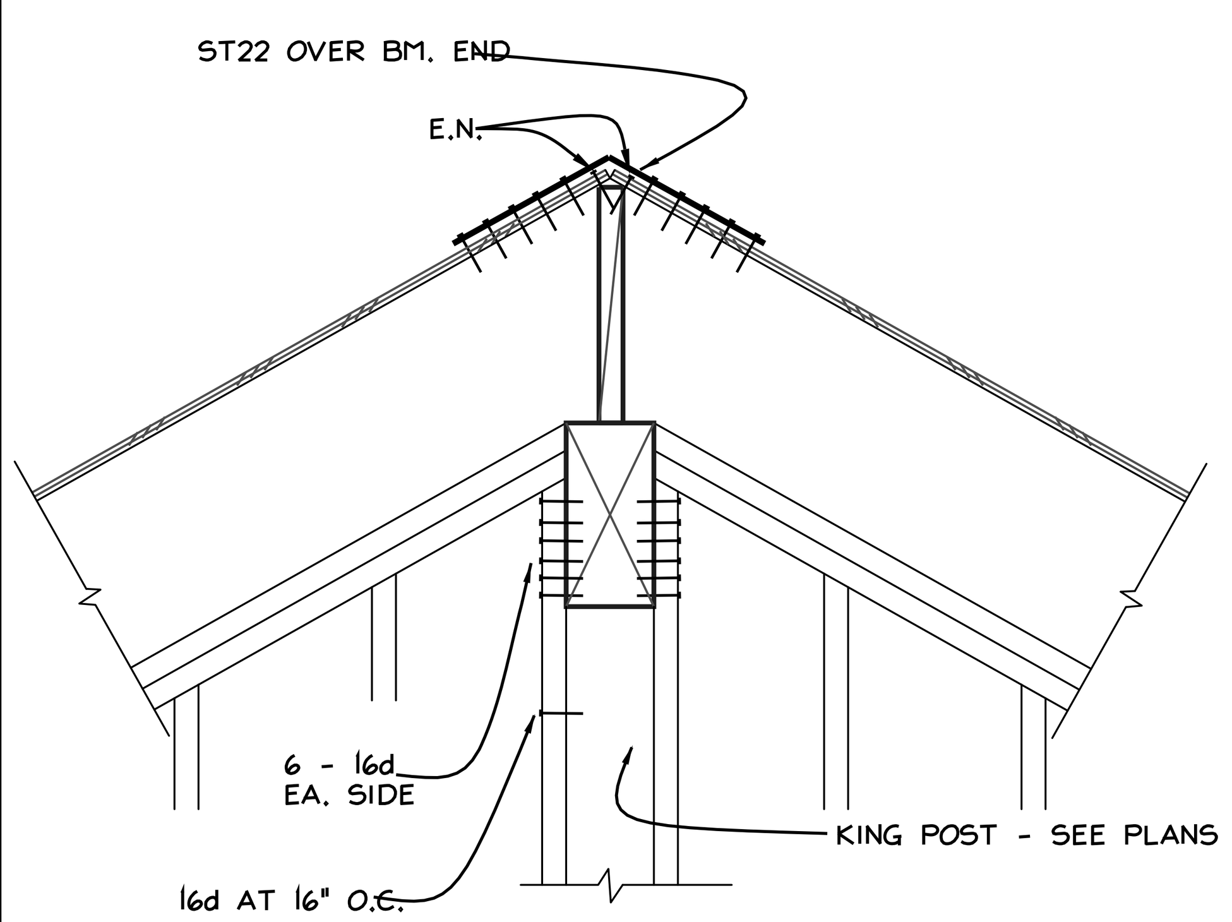
TOP PL. SPLICE DET. 3



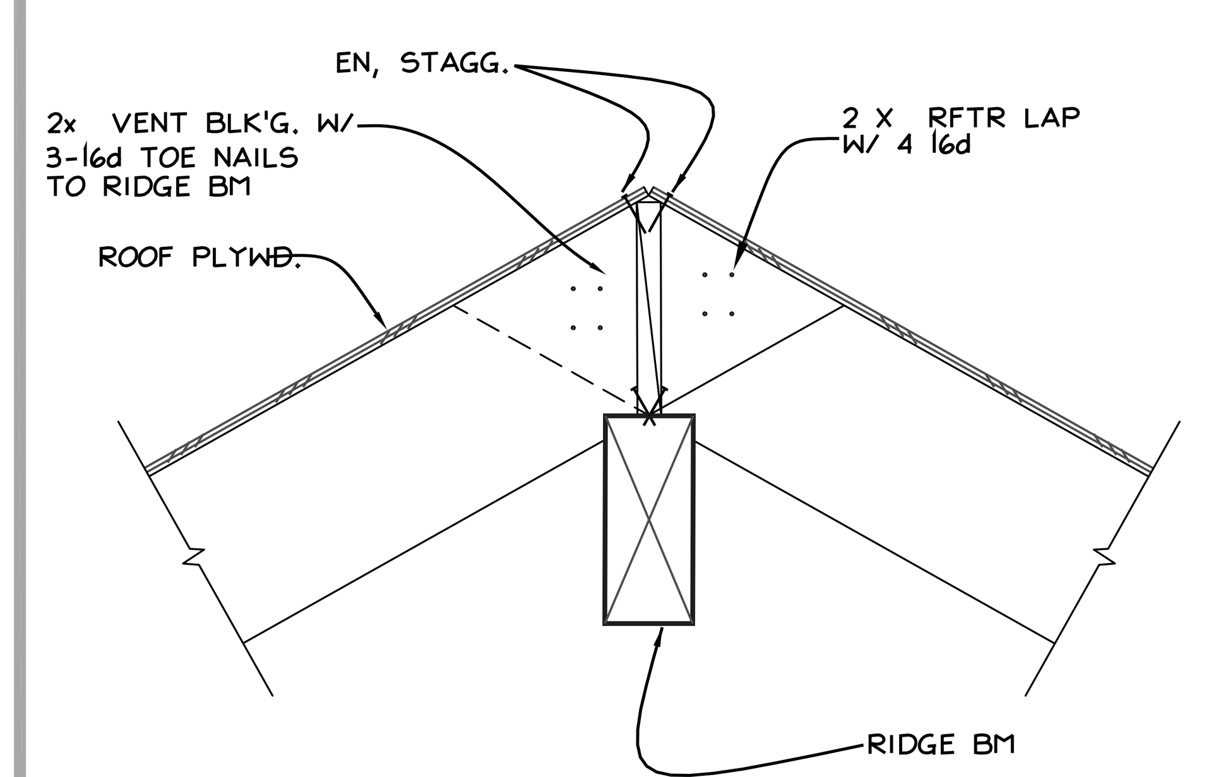
SHEAR TRANSFER DET. 4

SHEAR WALL NOTES:

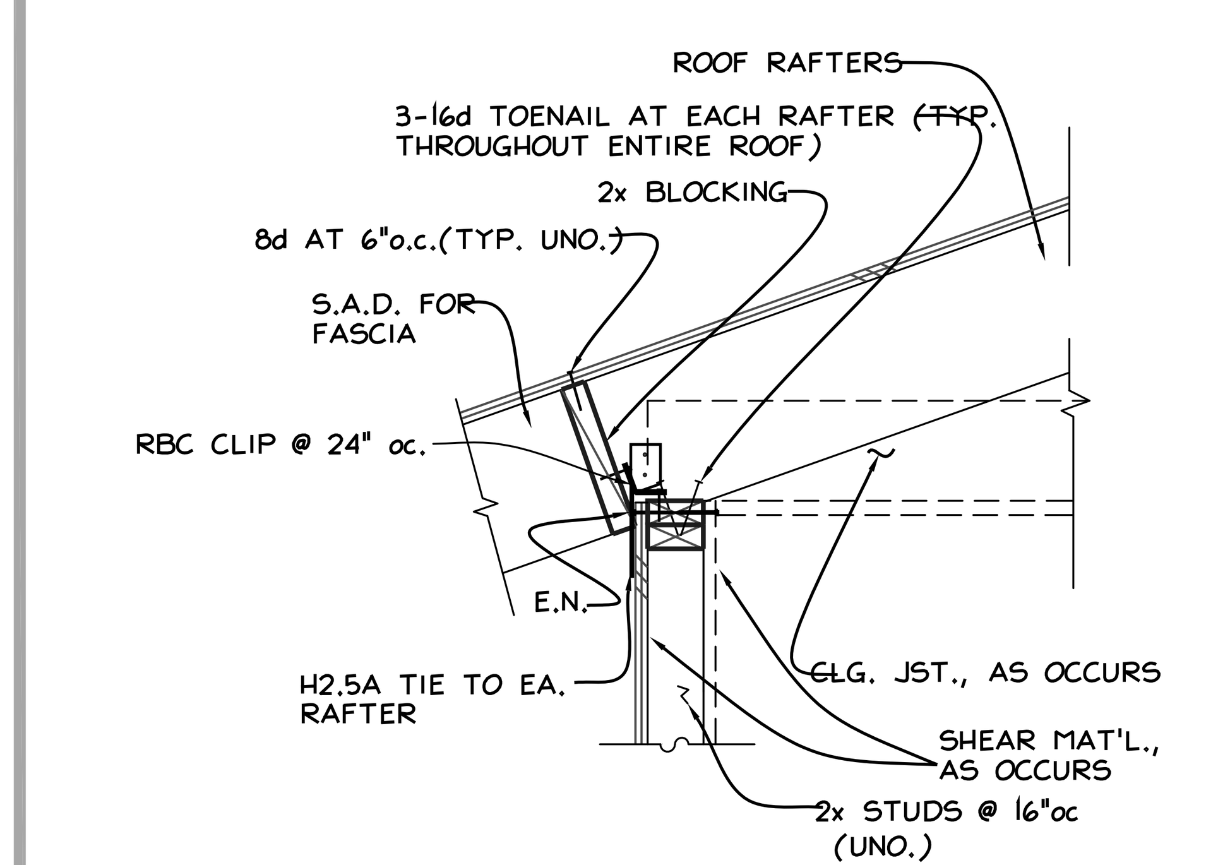
1. " ---- " SYMBOL INDICATES LOCATION OF SHEAR MATERIAL.
2. " △ " SYMBOL IS A SHEAR WALL IDENTIFIER, AND INDICATES SIDE ON WHICH SHEAR MATERIAL IS TO BE PLACED. SEE SHEAR WALL SCHEDULE FOR MORE INFORMATION.
3. BLOCK AND NAIL ALL JOINTS WITH NAILING SPECIFIED IN SHEAR WALL SCHEDULE.
4. 8d AND 10d NAILS SHALL BE COMMON NAILS OR HOT DIPPED GALVANIZED BOX NAILS.
5. 5/8"φ ANCHORS SHALL BE CAST INTO CONCRETE AT 4'-0" oc MAXIMUM, EXCEPT WHERE SHOWN OTHERWISE (SEE "SHEAR WALL SCHEDULE"). POWER DRIVEN FASTENERS WILL NOT BE PERMITTED ON EXTERIOR WALLS, OR SHEAR WALLS.
6. NAIL ROOF SHEATHING WITH 8d NAILS AT 6" O.C. @ EDGES AND 12" O.C. INTERIOR (U.N.O).
7. ALL HOLDOWNS, STRAPS AND ANGLES CALLED OUT ON THESE PLANS ARE TO BE MANUFACTURED BY SIMPSON CO. OR EQUAL.
8. NAIL SHEAR MATERIAL TO ALL POSTS ATTACHED TO HOLDOWN OR STRAPS WITH 2-ROWS EDGE NAILING.
9. ALL SIMPSON PRODUCTS ARE TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
10. ALL 'PA' TYPE ANCHORS TO BE INSTALLED OVER PLYWOOD SHEAR MATERIAL.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED, GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL, THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD.



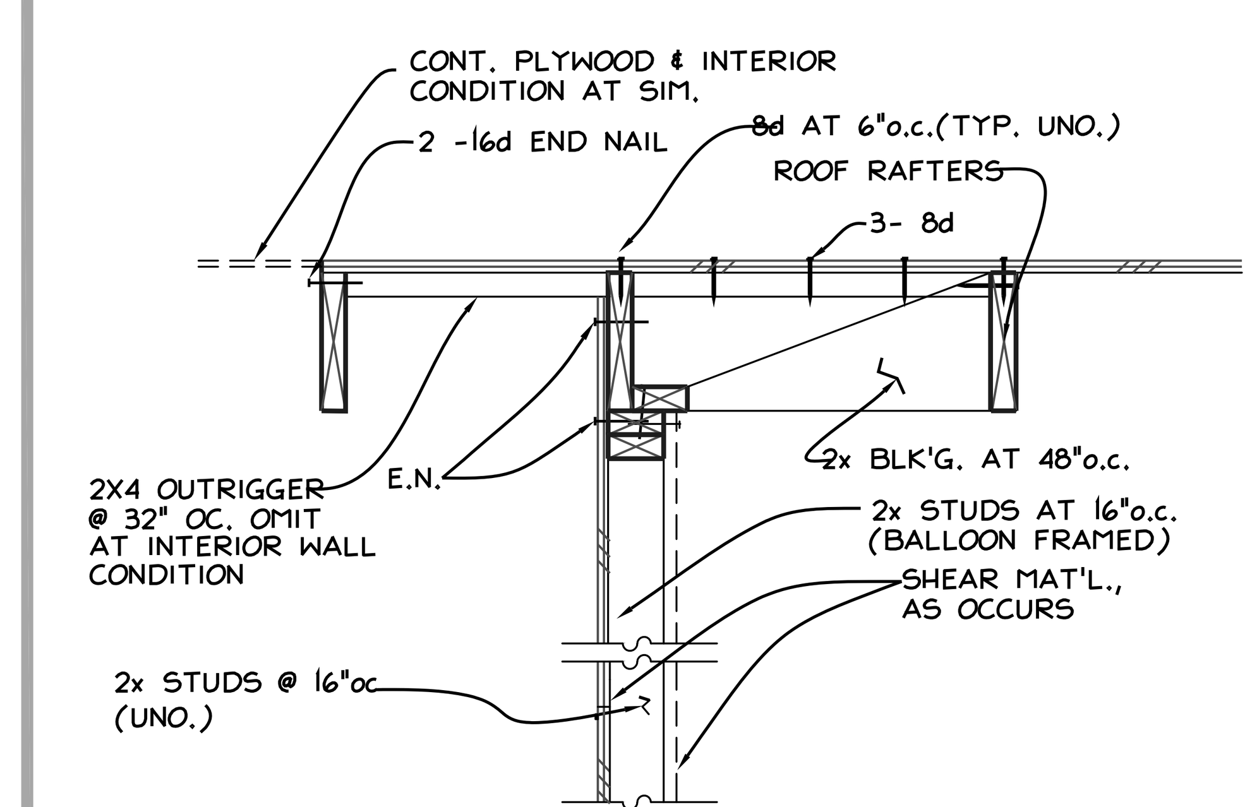
TYP. RIDGE BM. POCKET FRMG. 6



TYPICAL RIDGE BEAM FRMG. 7

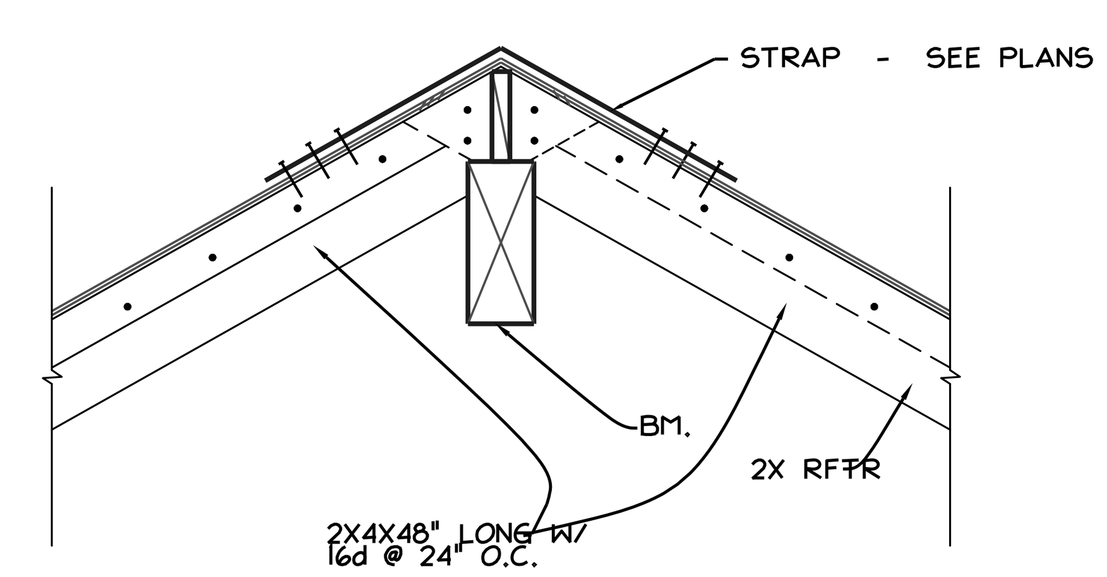


PERPENDICULAR RAFTER COND. 8

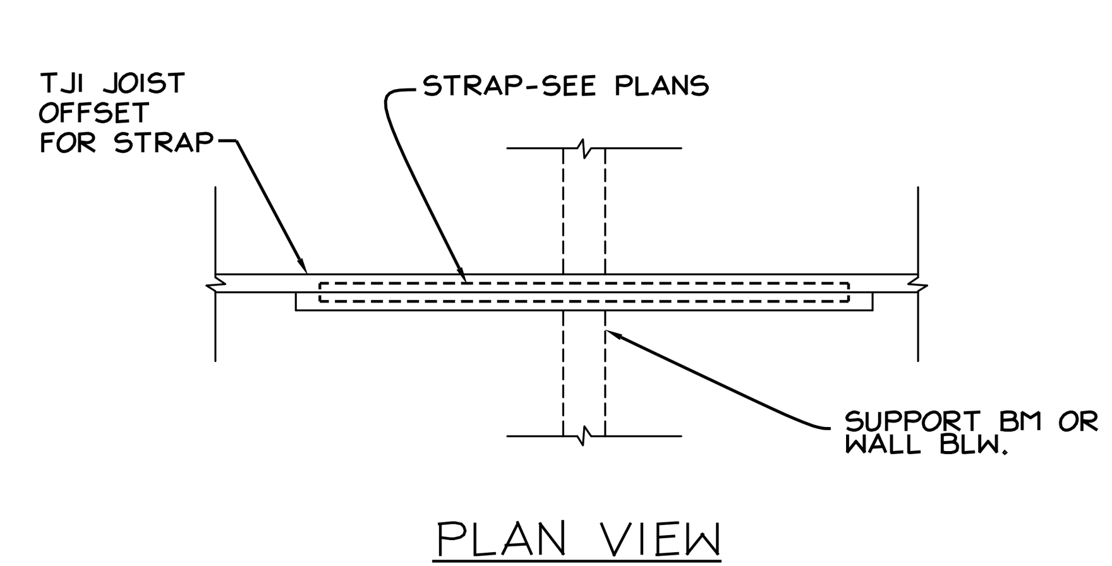


PARALLEL RAFTER COND. 9

10



TYP. COLLECTOR 11



TYP. COLLECTOR 12

NOTES: (U.N.O. ON PLANS)
1. "*" BLOCK ALL EDGES
2. "**" BLOCK ALL ADJOINING PLYWOOD EDGES WITH 3x LUMBER AND STAGGER NAILS (PLATES, STUDS, POST, BLOCKING, ETC.) USE 3x MUDSILL
3. OFFSET PANEL JOINTS ON DIFFERENT FRAMING MEMBERS WHERE PLYWOOD SHEAR MATERIAL OCCURS ON EACH SIDE OF WALL. OTHERWISE USE 3x MIN. LUMBER, NAILS SHALL BE STAGGERED ON BOTH SIDES
4. USE PNEUMATICALLY DRIVEN 16d NAILS FOR ALL SPACING LESS THAN 6"o.c.. IF SILL PLATES SPLITS, NAILS SHALL BE DRIVEN IN PRE-DRILLED HOLES. NAILS SHALL NOT BE UNDERDRIVEN, OVERDRIVEN AND/OR SLANTED.
5. ALL NAILS SHALL BE COMMON.
6. "N/A" INDICATES NOT APPLICABLE WHEN PLYWOOD IN ON THE EXTERIOR FACE OF WALL. SEE PLANS FOR ATTACHMENTS WHEN PLYWOOD IS ON INTERIOR FACE OF WALL.
7. PROVIDE STUDS AT 16" O.C. (MAX.)
8. OSB (ORIENTED STRAND BOARD) APA RATED BOARD MAYBE USED IN LIEU OF PLYWOOD WITH BUILDING OWNERS OR ARCHITECTS APPROVAL. HOWEVER, OSB BOARDS SHALL BE RATED EQUAL OR BETTER THAN THE PLYWOOD SPECIFIED.
9. USE 5/8φ (SHEAR BOLTS) ALL-THREAD ROD EMBED 6" INTO (E) CONCRETE & SET W/ SIMPSON 'SET-XP' EPOXY AT EXISTING FOOTING CONDITIONS ONLY.(DO NOT USE FOR HOLDOWN ANCHORS)
10. USE BLK'G OR RIM BOARD EACH SIDE OF WALL FOR LTP4.
11. T.N.- INDICATES TRANSFER NAILING CLIP (DO NOT TOENAIL)
12. ALL SILL NAILING T.N. & S.N. APPLY TO THE EXTENT OF SHEAR WALLS ONLY.
13. '+ ' PRE-DRILL HOLES, IF WOOD SPLITS.
14. USE 3" x 3" x 1/4" WASHER PLATE FOR ALL ANCHOR BOLTS/ 15/SD-3

SEE DETAIL 14/SD-5 FOR SOLE PLATE ATLERNATE CONNECTION

USE 3x P.T.D.F. MUDSILL AT FOUNDATION FOR SHEAR WALL TYPE BELOW: (OTHERWISE USE 2x P.T.D.F. MUDSILL W/ REDUCED A.B.'S SPACING BY HALF (1/2) AS SHOWN ON SHEAR WALL SCHEDULE W/ 3" SQ. x 1/4" THK. WASHER PLATE)
△3

USE 3x P.T.D.F. MUDSILL AT FOUNDATION FOR SHEAR WALL TYPES BELOW:
△4, △5, △6
△3/△3

SHEAR WALL SCHEDULE NOTE # 12

	SHEAR WALL CONNECTION		SHEAR TRANSFER NOTE#11	SILL PLATE CONNECTIONS (SEE NOTE # 9 @ EXISTING CONCRETE)		SHEAR WALL CAPACITY (#/')
MARK	MATERIAL	PLYWOOD NAILING	NAILING OR CLIPS (T.N.)	NAILING (S.N.) FOR 2x SOLE PLATE ONLY	ANCHOR BOLTS (A.B.'S) REMARKS: SHEAR BOLTS	
△1	1/2" CDX PLYWOOD P.I.: 24/0 *	10d AT 6"o.c. E.N. 10 AT 12"o.c. F.N.	16d AT 5"o.c. OR A35 @ 24" o.c. OR LTP4 AT 24" o.c	16d AT 5"o.c.	5/8"φ A.B. AT 4'-0"o.c.	310
△2	1/2" CDX PLYWOOD P.I.: 24/0 *	10d AT 4"o.c. E.N. 10d AT 12"o.c. F.N.	16d AT 3"o.c. OR A35 @ 16" o.c. OR LTP4 AT 16" o.c	14/SD-5	5/8"φ A.B. AT 3'-0"o.c.	460
△3	1/2" CDX PLYWOOD P.I.: 24/0 **	10d AT 3"o.c. E.N. 10d AT 12"o.c. F.N.	A35 @ 12" o.c. OR LTP4 AT 12" o.c	14/SD-5	5/8"φ A.B. AT 2'-4"o.c.	600
△4	1/2" CDX PLYWOOD P.I.: 24/0 **	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	A35 @ 10" o.c. OR LTP4 AT 10" o.c	14/SD-5	5/8"φ A.B. AT 1'-6"o.c.	770
△5	1/2" STR. I PLYWOOD P.I.: 24/0 **	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	A35 @ 8" o.c. OR LTP4 AT 8" o.c	14/SD-5	5/8"φ A.B. AT 1'-4"o.c.	870
△3/△3	1/2" CDX PLYWOOD ** EACH SIDE P.I.: 24/0	10d AT 3"o.c. E.N. 10d AT 12"o.c. F.N.	NOTE#10 LTP4 AT 8" o.c EACH SIDE, STAGGER	14/SD-5	5/8"φ A.B. AT 1'-2"o.c.	1200
△5/△5	1/2" STRUCT I PLYWOOD ** EACH SIDE P.I.: 24/0	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	NOTE#10 LTP4 AT 8" o.c EACH SIDE, STAGGER	14/SD-5	5/8"φ A.B. AT 8"o.c.	1740

TYPICAL PLYWOOD SHEAR WALL SCHEDULE 15

NO. REVISIONS

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 4, 2021

A PROPOSED REMODEL RESIDENCE FOR:
TOLIAO RESIDENCE
1357 ABBOTT AVE. CAMPBELL, CA 95008

DRAWINGS PROVIDED BY:
CLEAR OAK DESIGNS, INC.
1723 ROGER AVE, SUITE A
SAN JOSE, CA 95112

SCALE	
NOT TO SCALE, U.N.O.	
DRAWN	CHECKED
	RC
PROJ. NO.	DATE
20-144	1-4-21
DRAWING NO.	

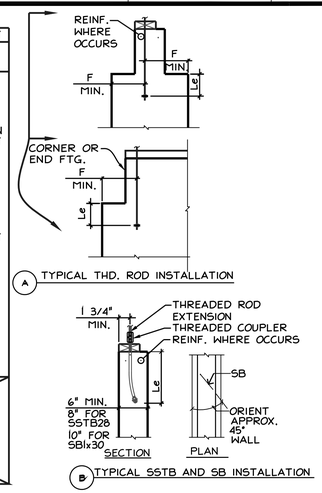
SD-4
SHEET(S)

20171-24X36

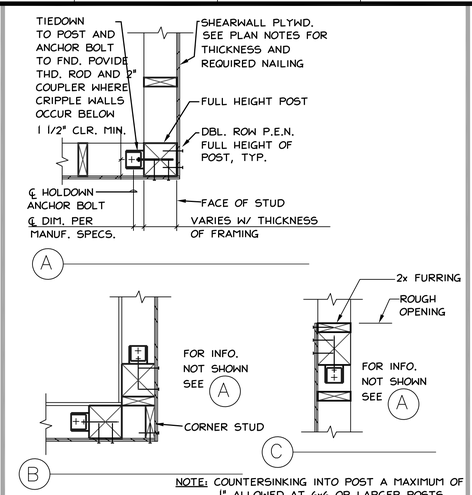
HOLDOWN ANCHOR BOLT SCHEDULE — 2

HOLDOWN SIZE	CAPACITY POST SIZE MIN.(INCHES)	OPTION A: THRD. ROD WITH DBL NUT/WASHER — ANCHOR BOLT SIZE	MIN. CLEARANCE Le	MIN. CLEARANCE F	REMARKS	OPTION B: SIMPSON SSTB ANCHOR BOLT — ANCHOR BOLT SIZE*	MIN. EMBED. (Le) inches	REMARKS
HDU2	3075# 2-2x6	5/8" THD. ROD	-	-		SB5/8x24	18	FOR INSTALLATION REQUIREMENT SEE (B)
HDU4	4565# 2-2x6	5/8" DIA. THD. ROD	-	-		SB5/8x24	18	
HDU5	5645# 2-2x6	5/8" DIA. THD. ROD	-	-		SB5/8x24	18	REFER TO SIMPSON CATALOG FOR ADDL. REQUIREMENT
HDU8	7870# 4x6	7/8" DIA. THD. ROD	-	-		SB7/8x24	18	
					SEE (A)			
HDU11	11175# 6x6	1" DIA. THD. ROD	15"	24"	PROVIDE DBL NUT AND PL 3/4x 5x5 WASHER AT BOTTOM W/ DOUBLE NUTS	-	-	
HDU14	14925# 7 1/4"x3 1/2"	1" DIA. THD. ROD	15"	24"				
HDI5	15305# 5 1/2"x5 1/2"	1 1/4" DIA. THD. ROD	14"	21"				
HDI9	19070# 5 1/2"x5 1/2"	1 1/4" DIA. THD. ROD	24"	24"				

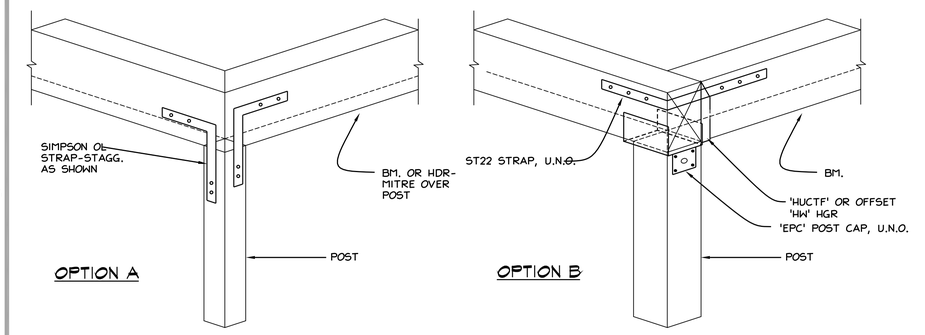
• MONO POUR



TYP. PLAN @ HOLDOWN — 3



POST/BM DETAIL — 5

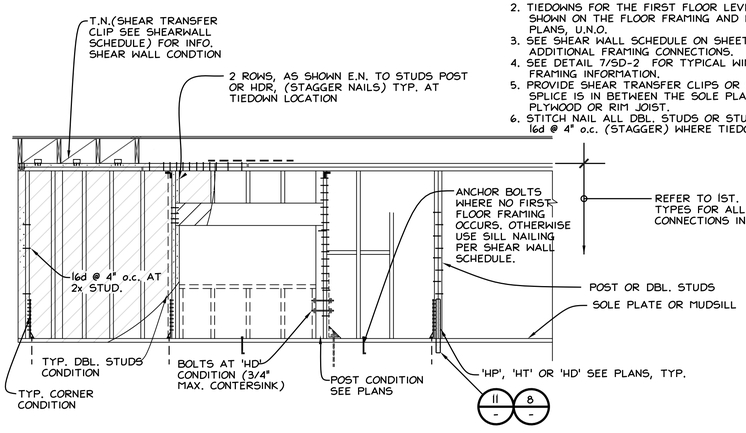


SCALE: NOT TO SCALE (N.T.S) TYP. (DO NOT SCALE DETAILS, SEE PLANS FOR ACTUAL DIMENSIONS OR SIZES)

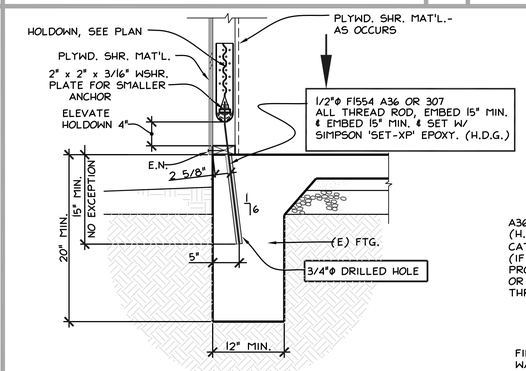
TYP. HOLDOWN TIEDOWN DET. LOCATION — 7

TIEDOWN NOTES:

1. THIS DETAIL SHOW ONLY GENERAL TIEDOWN LOCATIONS. SEE PLANS FOR ACTUAL FRAMING CONDITOINS.
2. TIEDOWNS FOR THE FIRST FLOOR LEVEL ARE SHOWN ON THE FLOOR FRAMING AND FOUNDATION PLANS, U.N.O.
3. SEE SHEAR WALL SCHEDULE ON SHEET SD-4 FOR ADDITIONAL FRAMING CONNECTIONS.
4. SEE DETAIL 7/SD-2 FOR TYPICAL WINDOW OR DOOR FRAMING INFORMATION.
5. PROVIDE SHEAR TRANSFER CLIPS OR S.N. IF PLYWOOD SPLICE IS IN BETWEEN THE SOLE PLATE ℄ FLOOR PLYWOOD OR RIM JOIST.
6. STITCH NAIL ALL DBL. STUDS OR STUD TO POST W/ 16d @ 4" o.c. (STAGGER) WHERE TIEDOWN OCCURS.

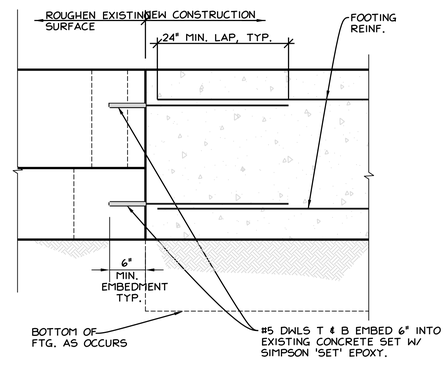


TYP. RETRO-FIT HOLDOWN DET. — 9

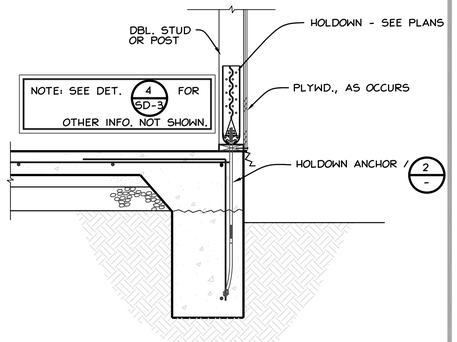


NO EXCEPTION, USE THE FOLLOWING MATERIALS:
1. USE DUCTILE ANCHOR, 1/2"ø F1554 A36 ALL THREAD ROD. SHOW CERTIFICATE OF MATERIAL DURING INSPECTION. SUBMIT TO ENGINEER OF RECORD.
2. SIMPSON SET-XP EPOXY.

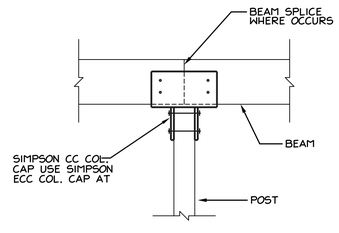
(N) TO (E) FOOTING — 10



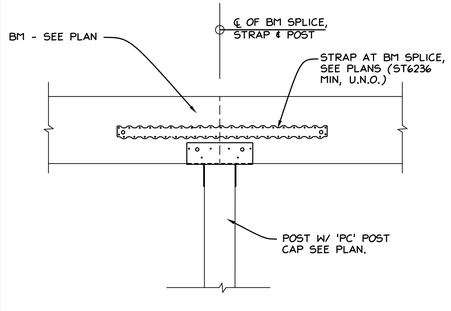
TYP. FTG. DET. — 11



TYP. BM TO COL DET. — 12



TYP. BM. CONN. — 13

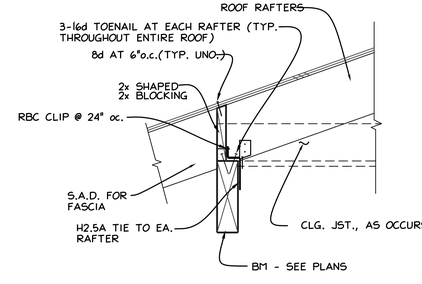


SOLE PLATE SCREWING SCHEDULE — 14

REQUIRED CONNECTIONS FOR 3x SOLE PLATE & ALTERNATE SOLE PLATE CONNECTION FOR 2x PLATE

MARK	2x SOLE PLATE (W/ 1 1/8" MAX. PLYWOOD SUBFLOOR) W/ SIMPSON SD525412 LONG SCREWS	3x SOLE PLATE (W/ 1 1/8" MAX. PLYWOOD SUBFLOOR) W/ SIMPSON SD525600 LONG SCREWS	SHEAR WALL CAPACITY (#/')
1	16" oc	16" oc	310
2	12" oc	12" oc	460
3	8" oc	8" oc	600
4	5" oc (STAGGERED)	5" oc	770
5	4" oc (STAGGERED)	4" oc (STAGGERED)	870
3/3	N/A	3" oc (STAGGERED)	1200
5/5	N/A	2 ROWS @ 4" oc (STAGGERED)	1740

PERPENDICULAR RAFTER COND. — 15



NO.	REVISIONS

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JANUARY 4, 2021

A PROPOSED REMODEL RESIDENCE FOR:

TOLIAO RESIDENCE

1357 ABBOTT AVE. CAMPBELL, CA 95008

DRAWINGS PROVIDED BY:
CLEAR OAK DESIGNS, INC.
1723 ROGER AVE, SUITE A
SAN JOSE, CA 95112

SCALE	NOT TO SCALE, U.N.O.
DRAWN	CHECKED RC
PROJ. NO.	20-144
DATE	1-4-21
DRAWING NO.	SD-5
SHEET(S)	

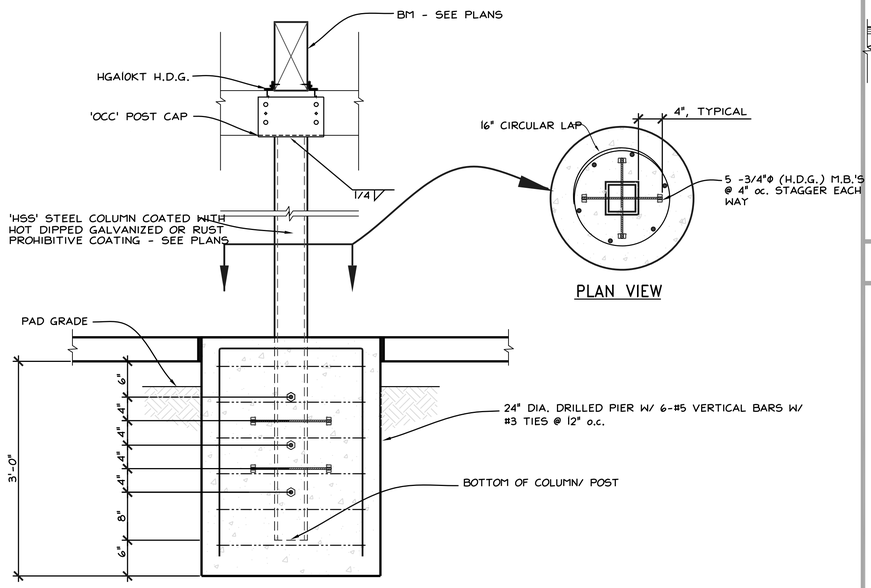
20171-24X36

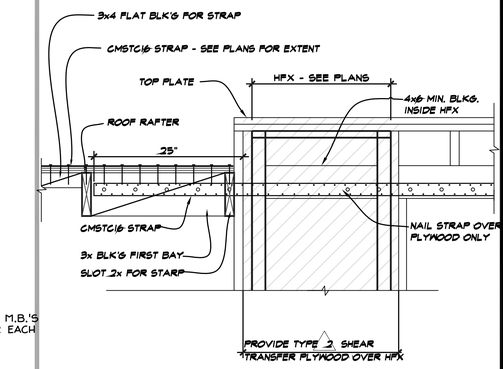
STRUCTURAL STEEL NOTES:

1. MATERIAL - STANDARD STRUCTURAL SHAPES, BARS, AND PLATES SHALL BE ASTM A36. STEEL TUBES SHALL BE ASTM A500, GRADE B. PIPES SHALL BE ASTM A53, TYPE E, GRADE B OR TYPE S, GRADE B.
2. WELDING - USE E70XX ELECTRODES. PERFORM ALL WELDING IN ACCORDANCE WITH AWS CODE. WELDS SHALL BE MADE ONLY BY OPERATORS CERTIFIED BY AWS IN PERFORMING THE TYPE OF WORK INDICATED.
3. BOLTING - USE ASTM A-307 BOLTS TYPICAL, U.O.N.
4. EXPOSED STEEL - STEEL EXPOSED TO THE ELEMENTS SHALL BE EITHER PAINTED W/ A RUST INHIBITIVE PRIMER OR GALVANIZED. GALVANIZING SHALL CONFORM TO ASTM A-123 FOR ROLLED, PRESSED OR FORGED SHAPES AND PLATES, ASTM A-153 FOR HARDWARE ITEMS, AND ASTM A-386 FOR ASSEMBLED STEEL PRODUCTS.
5. PAINTING - AFTER MATERIAL HAS BEEN PROPERLY CLEANED AND TREATED. APPLY SHOP PRIME COAT OF PAINT TO ALL SURFACES EXCEPT THOSE INTENDED FOR EMBEDMENT INTO CONCRETE OR THOSE TO RECEIVE FIELD WELDING. PROVIDE "TOUCH-UP" AT SITE.
6. FABRICATION - ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION.
7. SHOP DRAWINGS - PROVIDE SHOP DRAWINGS TO ARCHITECT AND ENGINEER TWO WEEKS IN ADVANCE OF FABRICATION INDICATING ALL FIELD CONDITIONS. SHOW ALL CONNECTIONS. REVIEW BY ENGINEER IS FOR GENERAL CONFORMANCE WITH CONTRACT DOCUMENTS AND DOES NOT ASSUME RESPONSIBILITY FOR THEIR ACCURACY.

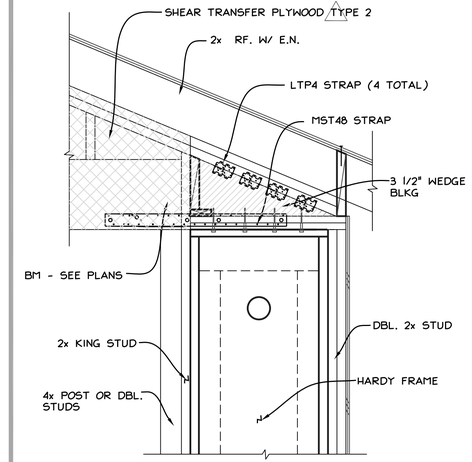
STATEMENT OF SPECIAL INSPECTION:

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCE STANDARD	CBC REFERENCE
A. EPOXY HOLDOWN EPOXY INSTALLATION	X	-	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
B. SHEARWALL NAILING @ 4" oc. OR LESS.	-	X	-	-
C. INSPECTION OF WELDING:				
1. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	X	-		1704.3.1
2. SINGLE PASS FILLET WELDS < 5/16"	X	-	AWS D1.1	1704.1



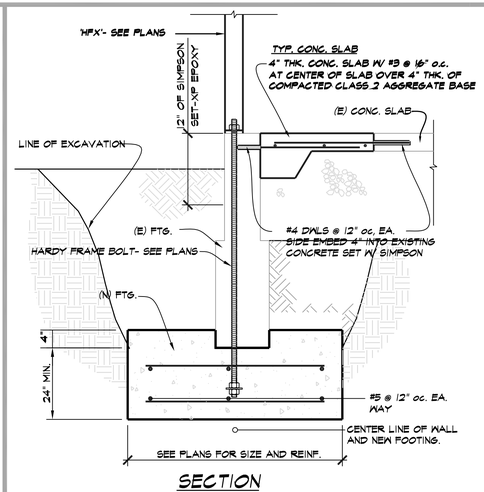


COLLECTOR DETAIL | 5

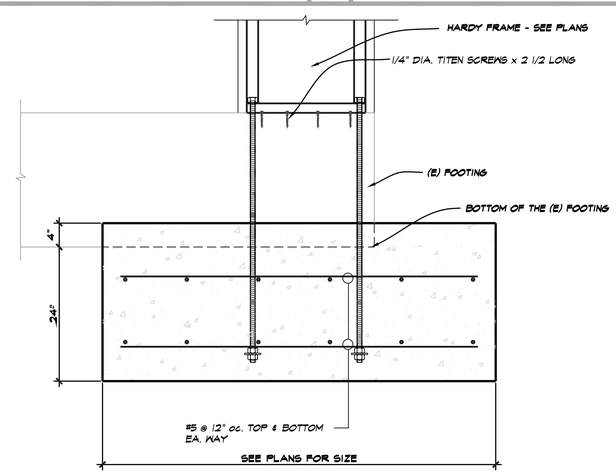


NON - LATERL BRACE/ VERTICAL ISOLATED COLUMN SUPPORT ONLY | 9

HARDY FRAME DETAIL | 10



SECTION



HARDY FRAME FOOTING BELOW EXISTING | 15

NO.	REVISIONS

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CAHULAN C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 4, 2021

AS AN INSTRUMENT OF SERVICE, THESE DOCUMENTS ARE NOT FINAL AND NOT FOR USE UNLESS THEY ARE SEALED, WET SIGNED AND DATED.

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SAN JOSE, CA 95112

SCALE: NOT TO SCALE, U.N.O.

DRAWN	CHECKED
	RC
PROJ. NO.	DATE
20-144	1-4-21

DRAWING NO.

SD-6

SHEET(S)

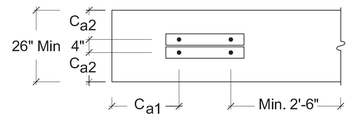
20171-24X36

BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

Model	Panel Width (in)	Anchorage [1]	Rod Dia (in)	Rod Grade [2,3]	BB-RA le [4] (in)	BB-RA Ca1 [5] (in)	BB-RA Ca2 [6] (in)	Stirrups [9] (in)	Shear [7] Ties
HFX-9x	9	1-1/8-STD-BB-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-BB-RA		STD	23			13 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-15x	15	1-1/8-STD-BB-RA		STD		20-5/8		14 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-18x	18	1-1/8-STD-BB-RA		STD				15 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-21x	21	1-1/8-STD-BB-RA		STD				16 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-24x	24	1-1/8-STD-BB-RA		STD				18 - # 4	
		1-1/8-HS-BB-RA		HS					

BACK TO BACK REINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - BB - RA
- REINFORCED ANCHORAGE "BACK TO BACK" INSTALLATION
- ROD GRADE
- ROD DIAMETER



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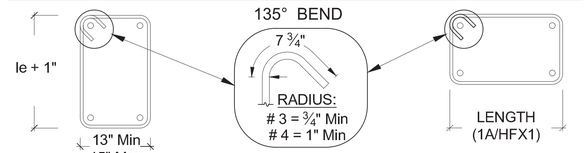
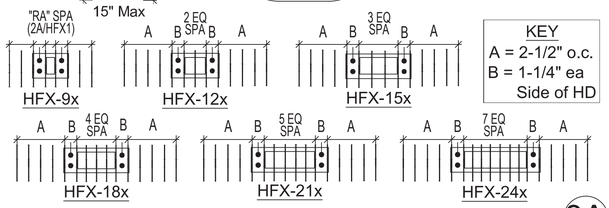
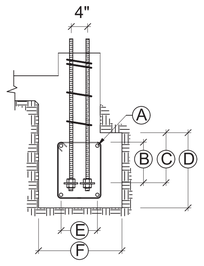




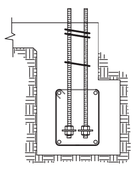
KEY
A = 2-1/2" o.c.
B = 1-1/4" ea Side of HD

BB-RA SHEAR TIES & STIRRUPS

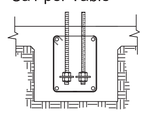
3A



CURB (12" MIN WIDTH)

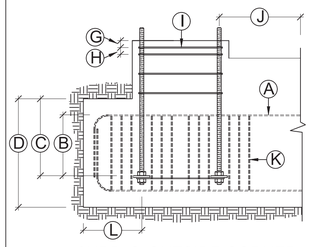


EXTERIOR SLAB

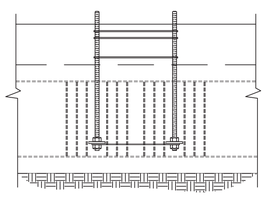


INTERIOR SLAB

A. #4 (Min) Longitudinal Rebar Top and Bottom by EOR
B. le - 3"
C. le per Table
D. le + 7"
E. CL = 10" Min, 12" Max
F. 2'-2" (Min)
G. ±1" From Top of Concrete to CL of Shear Tie
H. 1" CL @ Upper Two Ties
I. Shear Ties per Table
J. 2'-6" (Min) UNO by EOR
K. Stirrups per Table
L. Ca1 per Table



CURB @ OUTSIDE CORNER



CONTINUOUS FOOTING

BB-RA SECTIONS & ELEVATIONS

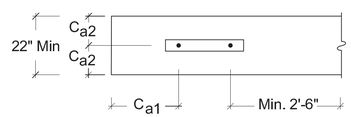
3B

REINFORCED ANCHORAGE (RA)

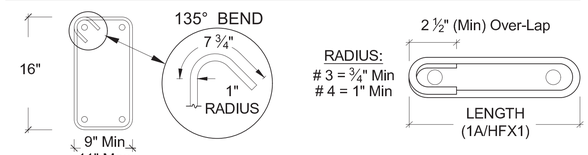
Model	Panel Width (in)	Anchorage [1]	Rod Dia (in)	Rod Grade [2,3]	RA le [4] (in)	RA Ca1 [5] (in)	RA Ca2 [6] (in)	Stirrups [9] (in)	Shear [7] Ties
HFX-9x	9	1-1/8-STD-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-RA		STD				9 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-15x	15	1-1/8-STD-RA		STD		20-5/8		10 - # 4	
		1-1/8-HS-RA		HS					
HFX-18x	18	1-1/8-STD-RA		STD					
		1-1/8-HS-RA		HS					
HFX-21x	21	1-1/8-STD-RA		STD				11 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-24x	24	1-1/8-STD-RA		STD				12 - # 4	
		1-1/8-HS-RA		HS					

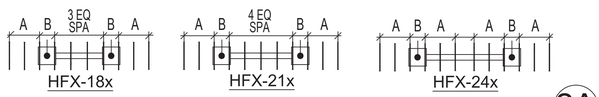
REINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - RA
- REINFORCED ANCHORAGE
- ROD GRADE
- ROD DIAMETER



2

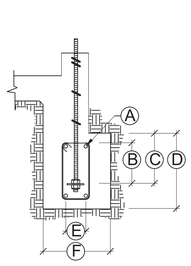




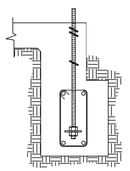
KEY
A = 3" o.c.
B = 1-1/2" ea Side of HD

RA SHEAR TIES & STIRRUPS

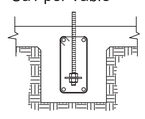
2A



CURB (6" MIN) WIDTH

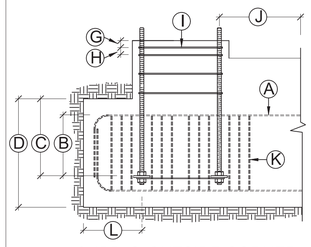


EXTERIOR SLAB

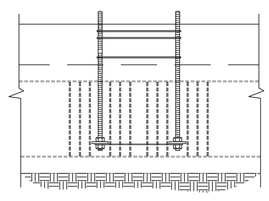


INTERIOR SLAB

A. #4 (Min) Longitudinal Rebar Top and Bottom by EOR
B. 12" Min
C. 15" Min
D. 22" Min
E. CL = 6" Min, 8" Max
F. 1'-10" (Min)
G. ±1" From Top of Concrete to CL of Shear Tie
H. 1" CL @ Upper Two Ties
I. Shear Ties per Table
J. 2'-6" Min UNO by EOR
K. Stirrups per Table
L. Ca1 per Table



CURB @ OUTSIDE CORNER



CONTINUOUS FOOTING

RA SECTIONS & ELEVATIONS

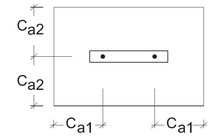
2B

UNREINFORCED ANCHORAGE (UA)

Model	Panel Height	Anchorage [1]	Rod Dia (in)	Rod Grade [2,3]	UA le [4] (in)	UA Ca1 [5] & Ca2 [6] (in)	Shear [7,8] Ties
HFX-9x	79.5" - 8'	1-1/8-STD-13-19	1-1/8	STD	13	19	1 - # 3
HFX-12x	78" - 10'	1-1/8-HS-20-30		HS	20	30	
HFX-15x, 18x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
HFX-15x, 18x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30	
HFX-21x, 24x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
		1-1/8-HS-23-34		HS	23	34	2 - # 3
HFX-21x, 24x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30	

UNREINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - 14 - 20
- END & EDGE DISTANCE (C_{a1} & C_{a2})
- EMBEDMENT DEPTH (l_e)
- ROD GRADE
- ROD DIAMETER



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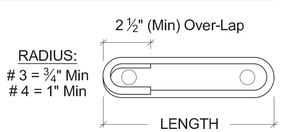
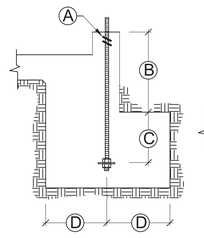


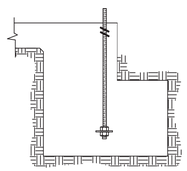
SHEAR TIES	NOT REQUIRED WHEN	
Model	Length	End Distance ≥	Edge Distance ≥
HFX-9x	7-1/2"	2-3/8"	2-3/8"
HFX-12x	10-1/2"	6-1/4"	3-1/2"
HFX-15x	12"	7-3/8"	4-1/4"
HFX-18x	15"	8-3/8"	5"
HFX-21x	18"	9-3/8"	5-1/2"
HFX-24x	21"	10-3/8"	6"

UA SHEAR TIES

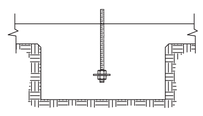
1A



CURB (6" MIN) WIDTH

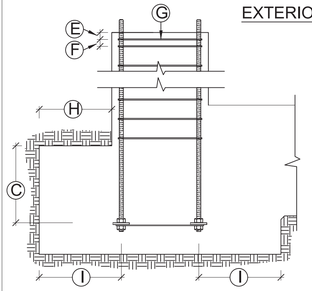


EXTERIOR SLAB

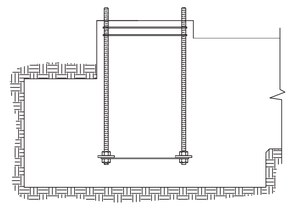


INTERIOR SLAB

A. Shear Ties per UA Table
B. 10" Max or per Plans
C. le per Table
D. Ca2 per Table
E. ±1" from Top of Concrete to CL of Shear Tie
F. 1" CL @ Upper Two Ties
G. Shear Ties per RA Table when Top of Concrete is ≥ 8" above Top of Slab
H. 12" Min
I. Ca1 per Table



STEM WALL @ OUTSIDE CORNER

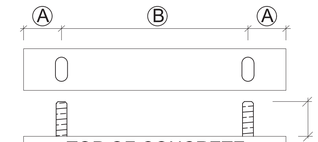


CURB @ OUTSIDE CORNER

UA SECTIONS & ELEVATIONS

1B

1. DESIGNS ARE TO RESIST LOADING PER ACI 318-14, SEC 17.2.3.4.3.
2. STD INDICATES ANCHORS COMPLYING WITH ASTM F1554 GRADE 36 WITH A HARDY FRAME BOLT BRACE (HFXBB) INSTALLED WITH STD OR GRADE 8 DOUBLE NUTS ON THE EMBED END.
3. HS INDICATES ANCHORS COMPLYING WITH ASTM A193 GRADE B7 WITH A 1/2"x3"x3"(MIN) HFPW PLATE WASHER INSTALLED WITH DOUBLE NUTS ON THE EMBED END (HFXBB NOT REQUIRED).
4. LE = LENGTH OF EMBEDMENT FROM THE TOP OF FOOTING OR GRADE BEAM TO THE TOP OF THE HFXBB BOLT BRACE (TOP OF THE EMBEDDED HFPW PLATE WASHER @ HS ANCHORS)
5. CA1 = DISTANCE FROM HD CENTERLINE TO THE END OF THE FOOTING OR GRADE BEAM.
6. CA2 = DISTANCE FROM HD CENTERLINE TO BOTH THE FRONT AND THE BACK FACE OF THE FOOTING OR GRADE BEAM.
7. SHEAR TIES ARE GRADE 60 (MIN) REBAR AND REQUIRED FOR NEAR EDGE DISTANCE CONDITIONS PER ACI-318-14, F'C = 2,500 PSI. CURBS AND STEM WALLS MUST BE 6 INCH (MIN) WIDTH FOR UA AND RA, 12 INCH (MIN) WIDTH FOR BB-RA.
8. FOR UA APPLICATIONS, ADDITIONAL TIES MAY BE REQUIRED AT STEM WALLS. SHEAR TIES ARE NOT REQUIRED FOR INSTALLATION AWAY FROM EDGE (SEE DETAIL 1A), INSTALLATION ON WOOD FRAMING, OR FOR IRC BRACED WALL PANEL APPLICATIONS.
9. STIRRUPS ARE GRADE 60 (MIN) REBAR. SEE TABLE FOR SIZE AND SPACING. SEE "STIRRUP LAYOUT" DIAGRAMS AND "KEY" FOR LAYOUT PATTERNS.
10. CONCRETE EDGE DISTANCES MUST COMPLY WITH ACI 318-14, SECTION 17.7.2. COATED REINFORCEMENT MAY BE SPECIFIED BY THE EOR TO LIMIT EXPOSURE AND THEREFORE REDUCE MINIMUM CONCRETE COVER. COATED REINFORCEMENT MUST COMPLY WITH ACI 318-14, SECTION 20.6.2.



Model	Width	Ⓐ	Ⓑ
HFX-9x	9"	1-3/4"	5-1/2"
HFX-12x	12"		8-1/2"
HFX-15x	15"	2-5/8"	9-3/4"
HFX-18x	18"		12-3/4"
HFX-21x	21"		15-3/4"
HFX-24x	24"		18-3/4"

HFX ANCHOR CENTERLINES

A

IMPORTANT!

1. ANCHORAGE IS DESIGNED FOR TENSION AND SHEAR TRANSFER ONLY, FOUNDATION DESIGN PER EOR.
2. REINFORCEMENT SHOWN IS THE MINIMUM REQUIREMENT AND IS NOT INTENDED TO REPLACE REINFORCEMENT DESIGNED BY THE EOR.
3. FOR RA AND BB-RA INSTALLATIONS, THE HFXBB BOLT BRACE MAY BE PLACED ON TOP OF THE STIRRUPS WITH DOUBLE-NUTS INSTALLED AT EMBED END OF STANDARD GRADE ANCHOR RODS. (NOTE: ½" x 3" x 3" MIN. HFPW PLATE WASHERS ARE REQUIRED TO BE DOUBLE-NUTTED AT EMBED END OF HIGH STRENGTH ANCHOR RODS.)
4. HIGH STRENGTH ALL-THREAD RODS PROVIDED BY HARDY FRAMES ARE STAMPED ON BOTH ENDS. HF B7

IMPORTANT NOTES

B

REVISIONS	DATE

ANCHORAGE DETAILS - HFX PANELS

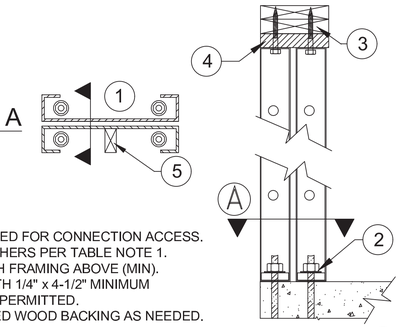
THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH *HARDY FRAME* PRODUCTS

HARDY FRAME®
SHEAR WALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

MiTek®

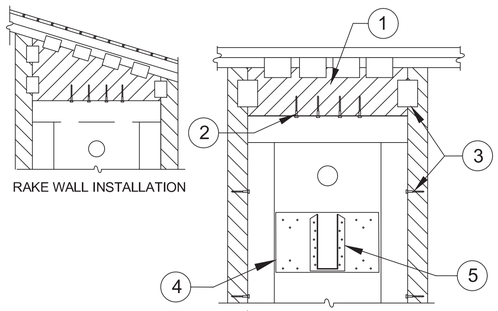
DATE: 1-1-2020

HFX1



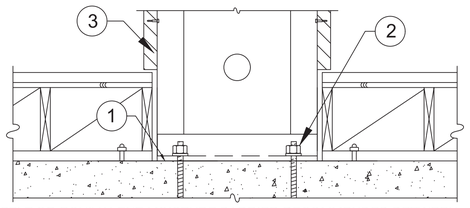
1. CAVITY ORIENTED FOR CONNECTION ACCESS.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. NOMINAL 8 INCH FRAMING ABOVE (MIN).
4. A 2x FILLER WITH 1/4" x 4-1/2" MINIMUM WS SCREWS IS PERMITTED.
5. FIELD INSTALLED WOOD BACKING AS NEEDED.

BACK TO BACK INSTALLATION 3



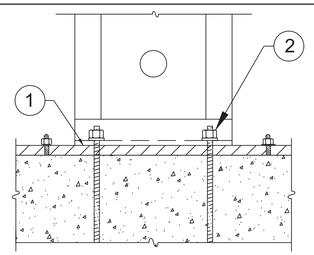
1. WOOD FILLER WITH USP MP4F CONNECTORS BOTH SIDES, QUANTITY BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED THROUGH PRE-PUNCHED HOLES IN PANEL EDGES REQUIRED WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE TO BRACE OUT-OF-PLANE HINGE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.
4. PRE-DRILL 3/16" DIA. HOLES, EVENLY SPACED IN FACE OF PANEL NO LESS THAN 2-1/4" OC AND INSTALL 1/4" DIA. WOOD SCREWS INTO 2x (MIN.) WOOD "LEDGER" IN PANEL CAVITY.
5. CONNECTOR AND ATTACHMENT BY BUILDING DESIGN PROFESSIONAL.

FILLER GREATER THAN 1-1/2 IN. 6



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS INSTALLED AT THE PANEL EDGES WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.

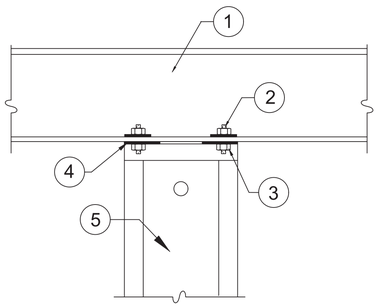
RAISED FLOOR HEAD-OUT 8



ALLOWABLE VALUES ON 2x PLATE ARE LESS THAN INSTALLATION ON CONCRETE

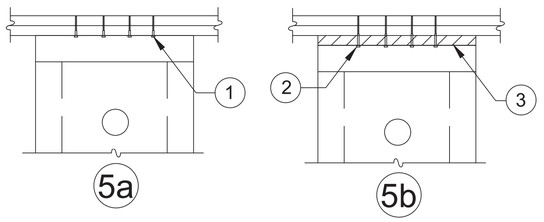
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND TREATED PLATE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

INSTALLATION ON 2x PLATE 11



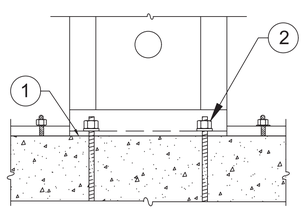
1. STEEL BEAM PER PLANS
2. ALL THREAD RODS THRU-BOLTED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. *HARDY FRAME*® STACKING WASHERS (HFSW) REQUIRED TO BE WELDED INSIDE TOP CHANNEL OF LOWER PANEL.
5. *HARDY FRAME*® "STK" PANEL WITH STACKING WASHERS WELDED INSIDE THE TOP CHANNEL BY MANUFACTURER.

STEEL BEAM ABOVE THRU-BOLT 2



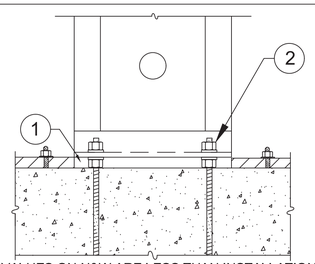
1. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. 2x WOOD FILLER.

TOP PLATE CONNECTIONS 5



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

INSTALLATION ON CONCRETE 7

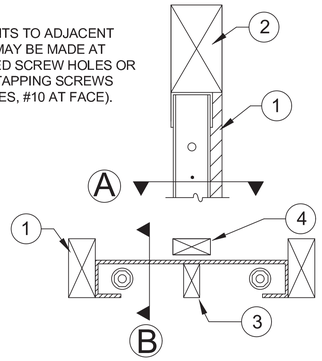


ALLOWABLE VALUES ON N&W ARE LESS THAN INSTALLATION ON CONCRETE

1. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH 5,000 PSI NON-SHRINK GROUT (MINIMUM).
2. NUT AND WASHER GRADES PER TABLE NOTE 1.

INSTALLATION ON NUTS & WASHERS 10

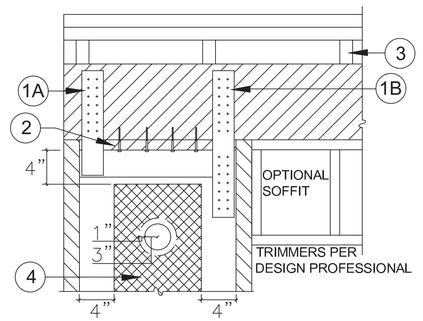
NOTE:
ATTACHMENTS TO ADJACENT TRIMMERS MAY BE MADE AT PREPUNCHED SCREW HOLES OR WITH SELF TAPPING SCREWS (#12 AT EDGES, #10 AT FACE).



1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY BUILDING DESIGN PROFESSIONAL.
2. 6x HEADER.
3. WOOD MEMBERS FOR BACKING MAY BE INSERTED VERTICALLY OR HORIZONTALLY IN THE PANEL CAVITY AS NEEDED.
4. WOOD MEMBER FLUSH TO FACE OF WALL FOR BACKING AS NEEDED.

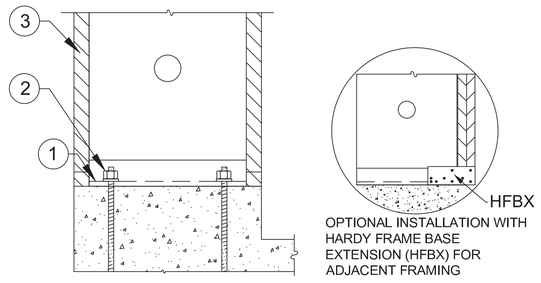
6x HEADER ABOVE-SECTIONS 1

NOTE:
TO PREVENT DRILLING ADDITIONAL HOLES ORIENT THE PANEL CAVITY TOWARD THE FIXTURE BEING INSTALLED.



1. (A) PRE-WELDED STRAPS ARE PROVIDED ON 78" AND 79-1/2" PANEL HEIGHTS. THEY ARE AVAILABLE FOR OTHER HEIGHTS UPON REQUEST.
   (B) FIELD INSTALLED STRAPS WITH SELF TAPPING SCREWS ARE PERMITTED. THE DESIGN AND CONNECTION IS BY THE DESIGN PROFESSIONAL.
2. A 2x WOOD FILLER WITH 1/4"x4-1/2" (MIN.) WS SCREWS IS PERMITTED.
3. WHEN CRIPPLE STUDS OCCUR, SHEAR TRANSFER DESIGN TO BE PER THE BUILDING DESIGN PROFESSIONAL.
4. A 1" DIA. HOLE MAY BE ADDED IN THE PANEL FACE WHEN IT IS LOCATED IN THE UPPER HALF OF THE PANEL HEIGHT AND IS 4" MINIMUM FROM ANY EDGE. FOR PANELS MORE THAN 12" WIDE, ADDITIONAL HOLES MUST BE OFFSET 1" MINIMUM FROM THE 3" DIA. PREPUNCHED HOLE. FOR HOLES LARGER THAN 1" DIAMETER OR TO ADD MORE THAN ONE HOLE CONTACT MITEK HARDY FRAME TECHNICAL SUPPORT AT (800) 754-3030.

TOP CONNECTION TO HEADER 4



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING OPTIONAL U.N.O. BY BUILDING DESIGN PROFESSIONAL.

INSTALLATION ON CURB 9

HFX PANELS 78 IN. THROUGH NOMINAL 13 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw Qty[2] (ea)	Screw Qty Available at Edges (ea)[3]
HFX-12,15,18,21 & 24x78	78	3-1/2	1-1/8	9" Width = 5	4
HFX-9x79.5	79-1/2			12" Width = 6	
HFX-12,15,18,21 & 24x8	92-1/4			15" Width = 8	
HFX-9x8	93-3/4				
HFX-12,15,18,21 & 24x9	104-1/4			18" Width = 10	5
HFX-12,15,18,21 & 24x10	116-1/4				
HFX-15,18,21 & 24x11	128-1/4			21" Width = 12	
HFX-15,18,21 & 24x12	140-1/4			24" Width = 14	6
HFX-15,18,21 & 24x13	152-1/4				

BALLOON PANELS 14 FEET THROUGH 20 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw Qty[2] (ea)	Screw Qty Available at Edges (ea)[3]
HFX-15,18,21 & 24x14	164-1/4	3-1/2	1-1/8	15" Width = 8	6
HFX-15,18,21 & 24x15	176-1/4				
HFX-15,18,21 & 24x16	188-1/4			18" Width = 10	
HFX-15,18,21 & 24x17	200-1/4				7
HFX-15,18,21 & 24x18	212-1/4			21" Width = 12	
HFX-15,18,21 & 24x19	224-1/4				8
HFX-15,18,21 & 24x20	236-1/4			24" Width = 14	

TABLE NOTES

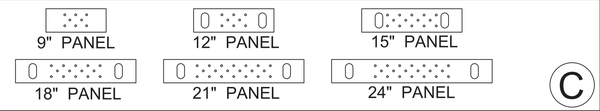
1. FOR STD OR HS GRADE HOLD DOWN ANCHOR BOLTS CONNECT TO THE PANEL BASE WITH HARDENED ROUND WASHERS BELOW GRADE 8 NUTS. ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS ON EACH BOLT. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHED DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x FILLER ABOVE THE PANEL.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS IS REQUIRED AT THE PANEL EDGES WHEN INSTALLING A FILLER ABOVE THE TOP CHANNEL THAT IS GREATER THAN 1-1/2" OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

A

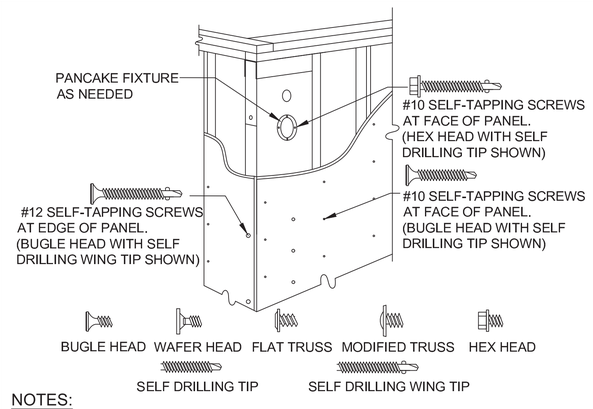
INSTALLATION INSTRUCTIONS

1. WHEN INSTALLING ON CONCRETE CONNECT WITH (1 EA) HARDENED ROUND WASHER BELOW (1 EA) GRADE 8 NUT, SECURE WITH A DEEP SOCKET (RECOMMENDED) UNTIL SNUG TIGHT. ALTERNATE WASHERS AND NUTS ARE PROVIDED IN TABLE NOTE 1.
2. INSTALLATION ON CONCRETE PROVIDES THE HIGHEST ALLOWABLE VALUES. CONFIRM WITH THE DESIGN PROFESSIONAL BEFORE INSTALLING ON OTHER SUPPORTING SURFACES.
3. USE 1/4"X4-1/2" MITEK PRO SERIES WS SCREWS AT TOP CONNECTIONS WITH A 2x FILLER. IF THE TOP OF PANEL IS IN DIRECT CONTACT WITH THE COLLECTOR ABOVE (TOP PLATES, HEADER, BEAM, ETC.) USE1/4 x 3" (MIN)
4. FOR INSTALLATIONS WITH A FILLER GREATER THAN 1-1/2" ABOVE, OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL, ADJACENT KING POSTS TO BRACE THE OUT-OF-PLANE HINGE CAN BE CONNECTED WITH 1/4" DIA. SCREWS THROUGH PRE-PUNCHED HOLES AT THE PANEL EDGES.

B



C



NOTES:

A. SURFACE FINISHES, CONNECTORS AND FIXTURES ARE ATTACHED TO THE PANEL FACE WITH # 10 SELF-TAPPING SCREWS SPACED NO LESS THAN 2-1/4" OC.
B. ATTACHMENTS TO THE PANEL EDGES ARE MADE WITH # 12 SELF-TAPPING SCREWS.
C. STRUCTURAL CONNECTIONS ARE TO BE DESIGNED BY THE DESIGN PROFESSIONAL.
D. STRUCTURAL HARDWARE USED TO TRANSFER LOADS SHOULD NOT EXCEED 12 GAUGE.

D

REVISIONS	DATE

FRAMING DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH MITEK® *HARDY FRAME*® PRODUCTS

HARDY FRAME®
SHEAR WALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

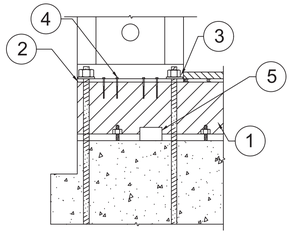
MiTek®

DATE:
1-1-2020

HFX2

NOTES:

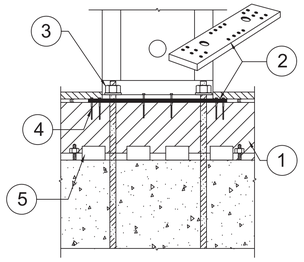
A. INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE, BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS
B. COUPLERS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® PANEL DIRECTLY ON RIM.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. 1/4" x 4-1/2" (MINIMUM) WS SCREWS THROUGH BOTTOM OF PANEL MINIMUM QUANTITY PER TABLE.
5. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

RAISED-OS CORNER 4

NOTE:
COUPLERS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.

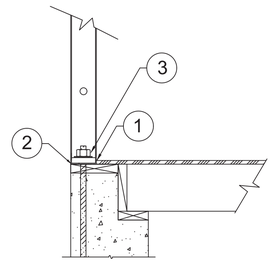


1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. NUTS AND WASHERS PER TABLE NOTE 1.
4. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
5. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

RAISED BEARING PLATE 3

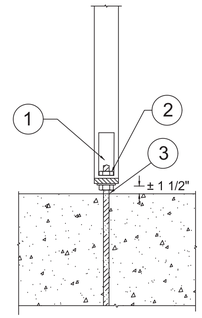
NOTES:

A. CHECK WALL HEIGHT, *HARDY FRAME*® BEARING PLATES BELOW THE PANEL BASE OR CUSTOM HEIGHT PANELS ARE AVAILABLE TO AVOID FILLERS GREATER THAN 1-1/2".
B. FOR MAXIMUM ALLOWABLE VALUES INSTALL PANEL ON CONCRETE



1. FLOOR SHEATHING NOTCHED, INSTALL PANEL ON WOOD PLATE.
2. 15# FELT OR EQUIVALENT RECOMMENDED BETWEEN PANEL BASE AND TREATED MUDSILL.
3. NUTS AND WASHERS PER TABLE NOTE 1.

RAISED STEM WALL 2



1. ACCESS HOLE LOCATED AT EDGE OF POST.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH 5,000 PSI STRENGTH NON-SHRINK GROUT (MIN).

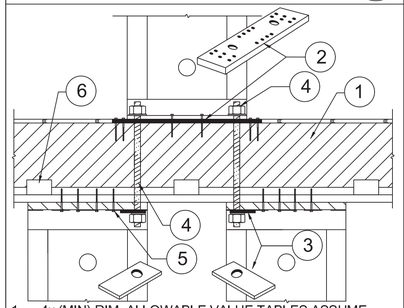
POST ON N&W 1

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Screw Quantity			Screw Qty[4] Available at Edges (ea)
				Panel	Top[2] (ea)	Bott[3] (ea)	
HFX-12,15,18,21 & 24x8	92-1/4	3-1/2	1-1/8	12" Width	6	6	4
HFX-12,15,18,21 & 24x9	104-1/4			15" Width	8	8	
HFX-12,15,18,21 & 24x10	116-1/4			18" Width	10	10	5
HFX-15,18,21 & 24x11	128-1/4			21" Width	12	12	
HFX-15,18,21 & 24x12	140-1/4			24" Width	14	14	6
HFX-15,18,21 & 24x13	152-1/4						

NOTE: *HARDY FRAME*® STACKING WASHERS (HFSW) ARE REQUIRED IN THE TOP OF PANELS WHEN CONNECTING TO TENSION ANCHORS FROM ABOVE. *HARDY FRAME*® "STK PANELS" INCLUDE HFSW WASHERS PRE-WELDED IN THE TOP CHANNEL.

1. HOLD DOWN TENSION ANCHORS SPECIFIED AS STANDARD GRADE (STD) MUST COMPLY WITH ASTM F1554 GRADE 36 (OR EQUAL). HOLD DOWN TENSION ANCHORS SPECIFIED AS HIGH STRENGTH (HS) MUST COMPLY WITH ASTM A 193 GRADE B7 (OR EQUAL). TENSION ANCHORS (BOTH GRADES) CONNECT TO THE UPPER AND LOWER PANELS WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS. A *HARDY FRAME*®"HFSW" STACKING WASHER IS REQUIRED IN THE TOP CHANNEL OF THE LOWER PANEL (AVAILABLE PRE-WELDED IN A *HARDY FRAME*®"STK" PANEL). ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS AT EACH ANCHOR CONNECTION. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHING DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x FILLER ABOVE THE PANEL.
3. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 4-1/2" (MINIMUM) AT CONNECTIONS TO FLOOR SYSTEMS AND BEAMS BELOW.
4. 1/4" DIAMETER SCREWS ARE REQUIRED AT THE EDGES WHEN INSTALLING A FILLER GREATER THAN 1-1/2 INCH ABOVE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

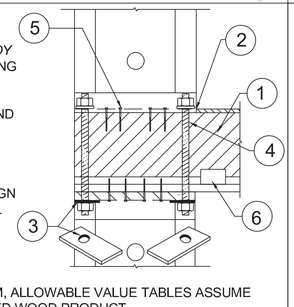
A



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8 IN. DIA HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

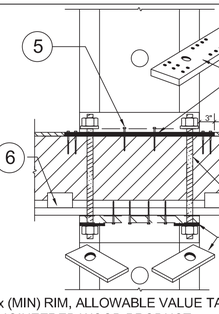
PYRAMID STACK 8

NOTE:
INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE, BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



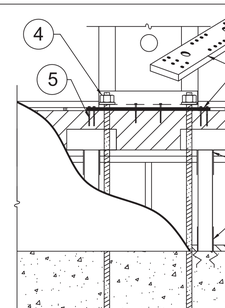
1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® PANEL DIRECTLY ON RIM.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STACK @ OS CORNER 7



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STRAIGHT STACK 6



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. USP POST CAP AND POST BASE BY THE BUILDING DESIGN PROFESSIONAL.
4. NUTS AND WASHERS PER TABLE NOTE 1.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.

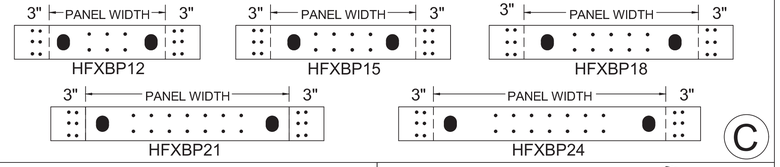
CRIPPLE WALL 5

INSTALLATION ON FLOOR SYSTEMS WITH *HARDY FRAME*® BEARING PLATE (HFXBP)

1. WITH HOLES PRE-DRILLED FOR 1-1/8" DIA.TENSION ANCHORS, INSTALL A SOLID 4x (MINIMUM) RIM IN FLOOR SYSTEM AT PANEL LOCATION. ALLOWABLE VALUE TABLES ASSUME THE RIM IS ENGINEERED WOOD PRODUCT (EWP).
2. NOTCH FLOOR SHEATHING THEN INSTALL HFXBP ON RIM WITH 6 EACH 1/4"X4-1/2" (MIN) "WS" SCREWS AT EACH END.
3. PLACE PANEL ON HFXBP.
4. WHEN STACKING PANELS, INSTALL "HFSW" STACKING WASHERS IN THE TOP CHANNEL OF THE LOWER PANEL. CONNECT LOWER TO UPPER PANELS WITH TENSION ANCHORS (GRADE PER PLANS) AND SECURE AT BOTH ENDS WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS TO BE SNUG TIGHT. *HARDY FRAME* "STK" PANELS THAT INCLUDE "HFSW" STACKING WASHERS PRE-WELDED IN THE TOP CHANNEL ARE AVAILABLE,
5. WHEN MORE THAN 12 SCREWS ARE REQUIRED FOR THE BOTTOM CONNECTION OR JOINTS IN FRAMING MEMBERS OCCUR AT SCREW LOCATIONS, INSTALL ADDITIONAL 1/4"x4-1/2" WS SCREWS THROUGH THE BASE OF PANEL WHERE THEY ALIGN WITH HOLES IN THE HFXBP.
6. FOR STANDARD WALL HEIGHTS, INSTALL A 2x FILLER ABOVE PANEL (DTL 5/HFX2). FOR FILLERS GREATER THAN 1-1/2 IN. SEE DETAIL 6/HFX2.

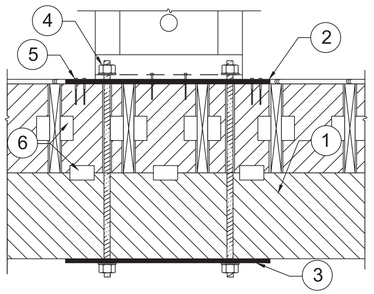
NOTE: INSTALLATIONS MAY VARY WITH JOB SPECIFIC CONDITIONS AND/OR SPECIFICATIONS BY THE BUILDING DESIGN PROFESSIONAL.

B



C

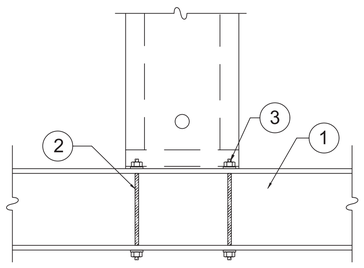
LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



1. DROP BEAM WITH FLOOR JOIST ABOVE PER PLAN.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® BEARING PLATE (HFXBP) OR BEARING PLATE WASHER AT UNDERSIDE OF BEAM SIZED PER BUILDING DESIGN PROFESSIONAL TO LIMIT CRUSHING FROM TENSION ANCHOR FORCES.
4. NUTS AND WASHERS PER TABLE NOTE 1.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP CONNECTORS BY DESIGN PROFESSIONAL

DROP BM - FL SYSTEM 14

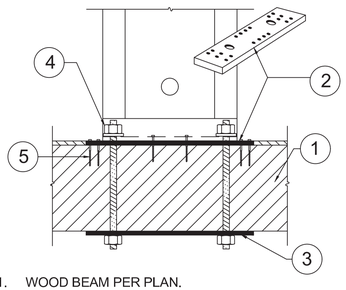
LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



1. STEEL BEAM PER PLANS
2. HOLD DOWN ALL THREAD RODS THRU-BOLTED TO BOTTOM FLANGE OF STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS AT PANEL BASE PER TABLE NOTE 1

STEEL BM THRU-BOLT 13

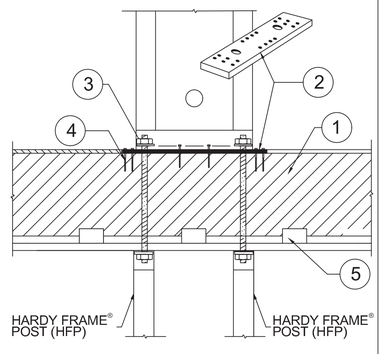
LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



1. WOOD BEAM PER PLAN.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® BEARING PLATE (HFXBP) OR BEARING PLATE WASHER AT UNDERSIDE OF BEAM SIZED PER BUILDING DESIGN PROFESSIONAL TO LIMIT CRUSHING FROM TENSION ANCHOR FORCES.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.

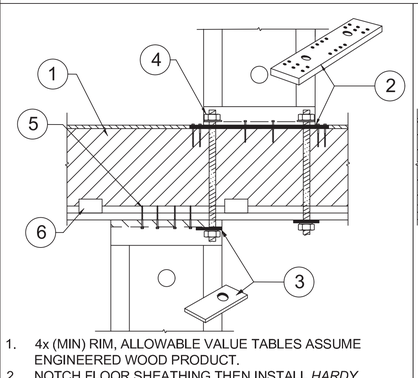
WOOD BM THRU-BOLT 12

LOAD PATH FROM BEAM TO FOUNDATION AND CHECK THAT PANEL DRIFT IS WITHIN CODE LIMIT BY BUILDING DESIGN PROFESSIONAL.



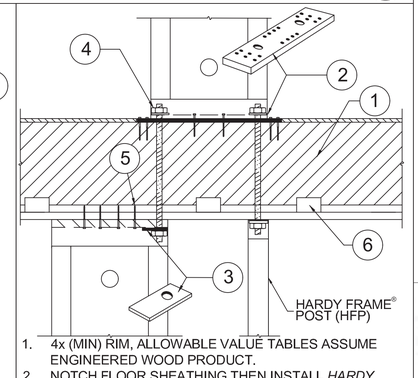
1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
4. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
5. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

HFP POSTS BELOW 11



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
3. *HARDY FRAME*® STACKING WASHER (HFSW) AT TOP OF PANEL REQUIRED WHEN CONNECTING TO TENSION ANCHOR FROM ABOVE.
4. 1-1/8" DIA. HOLD DOWN, HFSW AND N&W PER TABLE NOTE 1 ARE PROVIDED IN *HARDY FRAME*® HFTC KIT.
5. 1/4" x 4-1/2" (MIN) WS SCREWS, QUANTITY PER TABLE.
6. USP MP4F CONNECTORS, QUANTITY BY BUILDING DESIGN PROFESSIONAL.

STAGGERED THRU-BOLT 10



1. 4x (MIN) RIM, ALLOWABLE VALUE TABLES ASSUME ENGINEERED WOOD PRODUCT.
2. NOTCH FLOOR SHEATHING THEN INSTALL *HARDY FRAME*® BEARING PLATE (HFXBP) AND PANEL PER INSTALLATION NOTES 3-6, DETAIL B/HFX3.
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STAGGERED-HFP POST 9

REVISIONS	DATE

FLOOR SYSTEM DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH MITEK®*HARDY FRAME*® PRODUCTS

HARDY FRAME®
SHEAR WALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

MiTek®

DATE:
1-1-2020

HFX3

GENERAL INFORMATION					
01	Project Name	TOLIAO RESIDENCE			
02	Run Title	Title 24 Analysis			
03	Project Location	1357 ABBOTT AVENUE			
04	City	CAMPBELL	05	Standards Version	2019
06	Zip code	95008	07	Software Version	EnergyPro 8.2
08	Climate Zone	4	09	Front Orientation (deg/ Cardinal)	90
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	AdditionAlteration	13	Number of Bedrooms	3
14	Addition Cond. Floor Area (ft²)	170	15	Number of Stories	1
16	Existing Cond. Floor Area (ft²)	2331	17	Fenestration Average U-factor	0.58
18	Total Cond. Floor Area (ft²)	2501	19	Glazing Percentage (%)	19.78%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas Available?	Yes			

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	Building does not require field testing or HERS verification
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY				
Energy Use (kTOY/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	56.51	55.23	1.28	2.3
Space Cooling	63.74	64.96	-1.22	-1.9
IAQ Ventilation	0	0	0	
Water Heating	15.98	15.98	0	0
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	136.23	136.17	0.06	0

Registration Number: Registration Date/Time: HERS Provider:
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REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
- New ductwork added is less than 40 ft. in length

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

Building-level Verifications:
- -- None --

Cooling System Verifications:
- -- None --

Heating System Verifications:
- -- None --

HVAC Distribution System Verifications:
- -- None --

Domestic Hot Water System Verifications:
- -- None --

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
TOLIAO RESIDENCE	2501	1	3	2	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
Existing	Conditioned	Res HVAC1	2331	9.92	DHW Sys 1	N/A
Addition	Conditioned	Res HVAC1	170	9.92	DHW Sys 1	N/A

Registration Number: Registration Date/Time: HERS Provider:
CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Schema Version: rev 20200901 Report Generated: 2021-01-11 14:13:01

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
North Wall	Existing	Existing Wall Before 1978	0	Right	603.2	144.4	90	none	Existing	No
South Wall	Existing	Existing Wall Before 1978	180	Left	631.9	99.75	90	none	Existing	No
East Wall	Existing	Existing Wall Before 1978	90	Front	246.2	108	90	none	Existing	No
West Wall	Existing	Existing Wall Before 1978	270	Back	347.2	114.5	90	none	Existing	No
Add North Wall	Addition	R-13 Wall1	0	Right	55.2	20	90	none	New	n/a
Add West Wall	Addition	R-13 Wall1	270	Back	109.1	54	90	none	New	n/a
Interior Surface	Existing>>__Garage__	Existing Wall Before 19781	n/a	n/a	223.2	0	n/a		Existing	No
Interior Surface 2	Existing>>__Garage__	Existing Wall Before 19781	n/a	n/a	26.5	0	n/a		Existing	No
Interior Surface 3	Existing>Addition	R-13 Wall	n/a	n/a	129	0	n/a		New	n/a
Interior Surface 4	Existing>Addition	R-13 Wall	n/a	n/a	129	0	n/a		New	n/a
Interior Surface 5	Existing>Addition	R-13 Wall	n/a	n/a	79.4	0	n/a		New	n/a
Roof	Existing	Existing Roof Before 1978	n/a	n/a	2331	n/a	n/a		Existing	No
Add Roof	Addition	R-30 Roof Attic	n/a	n/a	170	n/a	n/a		New	n/a
Gar Roof	__Garage__	Existing Garage Roof	n/a	n/a	430	n/a	n/a		Existing	No
Gar North Wall	__Garage__	Garage Wall	0	Right	176.9	0	90	none	Existing	No
Gar South Wall	__Garage__	Garage Wall	180	Left	203.4	0	90	none	Existing	No
Gar East Wall	__Garage__	Garage Wall	90	Front	223.2	134	90	none	Existing	No

Registration Number: Registration Date/Time: HERS Provider:
CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Schema Version: rev 20200901 Report Generated: 2021-01-11 14:13:01

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic__Garage__	Attic Garage Roof Cons	Ventilated	3	0.1	0.85	No	No	Existing	No
Attic Existing	Attic RoofExisting	Ventilated	3	0.1	0.85	No	No	Existing	No
Attic Addition	Attic RoofAddition	Ventilated	3	0.1	0.85	No	No	New	n/a

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
N Glass Doors	Window	North Wall	Right	0			1	35.4	1.04	Table 110.6-A	0.76	Table 110.6-B	Bug Screen	Existing	No
N Windows	Window	North Wall	Right	0			1	109	1.04	Table 110.6-A	0.76	Table 110.6-B	Bug Screen	Existing	No
S Windows	Window	South Wall	Left	180			1	99.75	1.04	Table 110.6-A	0.76	Table 110.6-B	Bug Screen	Existing	No
E Windows	Window	East Wall	Front	90			1	62	1.04	Table 110.6-A	0.76	Table 110.6-B	Bug Screen	Existing	No
W Glass Doors	Window	West Wall	Back	270			1	48.5	1.04	Table 110.6-A	0.76	Table 110.6-B	Bug Screen	Existing	No
W Windows	Window	West Wall	Back	270			1	66	1.04	Table 110.6-A	0.76	Table 110.6-B	Bug Screen	Existing	No
Add N Glass Doors	Window	Add North Wall	Right	0			1	20	0.58	NFRC	0.45	NFRC	Bug Screen	New	n/a
Add W Windows	Window	Add West Wall	Back	270			1	54	0.58	NFRC	0.45	NFRC	Bug Screen	New	n/a

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OPAQUE DOORS

01	02	03	04	05	06
Name	Side of Building	Area (ft²)	U-factor	Status	Verified Existing Condition
E Door	East Wall	46	0.5	Existing	No
GarageDoor	Gar East Wall	114	1	Existing	No

SLAB FLOORS

01	02	03	04	05	06	07	08	09	10
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated	Status	Verified Existing Condition
Slab Floor	Existing	2331	214.6	none	0	80%	No	Existing	No
Add Slab Floor	Addition	170	16.6	none	0	80%	No	New	n/a
Gar Slab Floor	__Garage__	430	60.8	none	0	0%	No	Existing	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
Garage Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
Existing Wall Before 1978	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.302	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: Wood Siding/sheathing/decking

Registration Number: Registration Date/Time: HERS Provider:
CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Schema Version: rev 20200901 Report Generated: 2021-01-11 14:13:01

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-13 Wall1	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Exterior Finish: Wood Siding/sheathing/decking
Existing Wall Before 19781	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
R-13 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.092	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Other Side Finish: Gypsum Board
Attic Garage Roof Cons	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Attic RoofExisting	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Attic RoofAddition	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Existing Garage Roof	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.472	Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board
Existing Roof Before 1978	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-11	None / None	0.083	Over Ceiling Joists: R-1.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

Registration Number: Registration Date/Time: HERS Provider:
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OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x10 @ 16 in. O. C.	R-30	None / None	0.034	Over Ceiling Joists: R-6.0 insul. Cavity / Frame: R-24.1 / 2x10 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09	10
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification	Status	Verified Existing Condition	Existing Water Heating System
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	n/a	None	n/a	Existing	No	

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition	Status	Verified Existing Condition
DHW Heater 1	Gas	Small Storage	1	50	0.93-EF	<= 75 kBtu/hr	0	80	n/a	n/a	n/a	Existing	No

Registration Number: Registration Date/Time: HERS Provider:
CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Schema Version: rev 20200901 Report Generated: 2021-01-11 14:13:01

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
Res HVAC1	Heating and cooling system other	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1	n/a	Existing	No	1	1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Heating Efficiency
Heating Component 1	Central gas furnace	1	AFUE-75

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER/CEER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	Central split AC	1	8	8	Not Zonal	Single Speed	Cooling Component 1-hers-cool

Registration Number: Registration Date/Time: HERS Provider:
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HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
			Duct Ins. R-value		Duct Location		Surface Area								
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts 40 ft
Air Distribution System 1	Unconditioned attic	Non-Verified	R-6	R-6	Attic	Attic	n/a	n/a	No Bypass Duct	Existing (not specified)	Air Distribution System 1-hers-dist	Existing + New	No	n/a	n/a

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Not Required	0

PROJECT NOTES
www.title24data.com
e-mail: inbox@title24data.com
"One Day Service" since 1978

Registration Number: Registration Date/Time: HERS Provider:
CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.1.300 Schema Version: rev 20200901 Report Generated: 2021-01-11 14:13:01

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
DAVID A. McCLAIN	
Company: Title 24 Data Corp.	Signature Date: 1/11/2021
Address: 633 MONTEREY TRAIL & POB 2199	CEA/ HERS Certification Identification (if applicable): CEA NR16-16-20033/R16-14-20096
City/State/Zip: FRAZIER PARK, CALIFORNIA 93225-2199	Phone: 800-237-8824

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
ROSS ROHRER ROSS ROHRER	
Company: CLEAR OAK DESIGNS	Date Signed: 1/11/2021
Address: 1723 ROGERS AVENUE SUITE A	License:
City/State/Zip: SAN JOSE, CA 95112	Phone: (408) 436-5448

Registration Number: Registration Date/Time: HERS Provider:
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REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

T24-1

Tollao Residence
1357 Abbott Ave
Campbell, CA

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

DATE:
4/11/2021

SCALE:

SHEET:
T24-1

2019 Low-Rise Residential Mandatory Measures Summary

*NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. *Exceptions may apply. (01/2020)*

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g)	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g)
§ 110.8(i)	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j)	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling, or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d)
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(j):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58, or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
Space Conditioning, Water Heating, and Plumbing System Measures:	
§ 110.0 & 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters: must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone, and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*
§ 110.3(c)4:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume; Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality:	
§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	**Single Family Detached Dwelling Units.** Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2, and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	**Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	**Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	**Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting, a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.*
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.*
Lighting Measures:	
§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling, air leakage; sealing, maintenance, and socket and light source as described in § 150.0(k)1.C.
§ 150.0(k)1D:	**Electronic Ballasts for Fluorescent Lamps.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights, Step Lights, and Path Lights.** Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).*
§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase-cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems.*
§ 150.0(k)2C:	**Interior Switches and Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions:
§ 150.0(k)2E:	**Interior Switches and Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearances of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks; buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3.	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(j)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit; within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use", a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(j)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC): If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet the requirements of the CMC: §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures, joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes; mastics, sealants; and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9	**Protection of Insulation.** Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e), and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** A multisensor programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	**Interior Switches and Controls.** Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	**Interior Switches and Controls.** Under cabinet lighting must be controlled separately from ceiling installed lighting systems.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3A (ON and OFF switch) and the requirements in either § 150.0(k)3Ai (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches, and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8, or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0, and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on sleep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents; chimneys; architectural features, and roof mounted equipment.*
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.*
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service, and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double-pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

REVISION TABLE

NUMBER	DATE	REVISED BY	DESCRIPTION

T24-2

DRAWINGS PROVIDED BY:
Clear Oak Designs Inc
1723 Rogers Ave Suite A
San Jose, CA

Toliao Residence
1357 Abbott Ave
Campbell, CA

DATE:
4/11/2021

SCALE:

SHEET:
T24-2

FRESH CONCRETE AND MORTAR APPLICATION

BEST MANAGEMENT PRACTICES FOR

- Masons and bricklayers
- Sidewalk construction crews
- Patio construction workers
- Construction inspectors
- General contractors
- Home builders
- Developers

GENERAL BUSINESS PRACTICES

- Both at your yard and the construction site, always store both dry and wet materials under cover, protected from rainfall and runoff. Protect dry materials from wind.
- Secure bags of cement after they are open. Be sure to keep wind-blown cement powder away from gutters, storm drains, rainfall, and runoff.
- Wash out concrete mixers only in designated wash-out areas in your yard, where the water will flow into containment ponds or onto dirt. Whenever possible, recycle washout by pumping back into mixers for reuse. Never dispose of washout into the street, storm drains, drainage ditches, or streams.

DURING CONSTRUCTION

- Don't mix up more fresh concrete or cement than you will use in a day.
- Set up and operate small mixers on tarps or heavy plastic drop cloths.
- When cleaning up after driveway or sidewalk construction, wash fines onto dirt areas, not down the driveway or into the street or storm drain.
- Place hay bales or other erosion controls down-slope to capture runoff carrying mortar or cement before it reaches the storm drain.
- When breaking up paving, be sure to pick up all the pieces and dispose properly.
- Recycle large chunks of broken concrete at a landfill.
- Dispose of small amounts of excess dry concrete, grout, and mortar in the trash.
- Never bury waste material.

STORM DRAIN POLLUTION FROM MASONRY AND PAVING

Fresh concrete and cement-related mortars that wash into lakes, streams, or estuaries are toxic to fish and the aquatic environment. Disposing of these materials to the strom drains or creeks causes serious problems and is prohibited by law.

LANDSCAPING, GARDENING, AND POOL MAINTENANCE

BEST MANAGEMENT PRACTICES FOR THE:

- Landscapers
- Gardeners
- Swimming pool/spa service and repair workers
- General contractors
- Home builders
- Developers

GENERAL BUSINESS PRACTICES

- Protect stockpiles and landscaping materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Store pesticides, fertilizers, and other chemicals indoors or in a shed or storage cabinet.
- Schedule grading and excavation projects for dry weather.
- Use temporary check dams or ditches to divert runoff away from storm drains.
- Protect storm drains with hay bales or other erosion controls.
- Revegetation is an excellent form of erosion control for any site.

POOL/FOUNTAIN/SPA MAINTENANCE

- Never discharge pool or spa water to a street or storm drain.

OR

- When emptying a pool or spa, let chlorine dissipate for a few days, and then recycle/reuse water by draining it gradually onto a landscaped area.
- Contact the local sewage treatment authority. You may be able to discharge to the sanitary sewer by running a hose to a utility sink or sewer pipe cleanout junction.
- Do not use copper-based algaecides unless absolutely necessary. Control algae with chlorine or other alternatives to copper-based pool chemicals. Copper is a powerful herbicide. Sewage treatment technology cannot remove all of the metals that enter a treatment plant.

LANDSCAPING/GARDEN MAINTENANCE

- Use up pesticides. Rinse containers, and use rinse water as product. Dispose of rinsed containers in the trash.
- Dispose of unused pesticide as hazardous waste.
- Collect lawn and garden clippings, pruning waste, and tree trimmings. Chip if necessary, and compost.
- In communities with curbside yard waste recycling, leave clippings and pruning waste for pickup in approved bags or containers. Or, take to a landfill that composts yard waste.
- Do not place yard waste in gutters.
- Do not blow or rake leaves, etc. into the street.

STORM DRAIN POLLUTION FROM LANDSCAPING AND SWIMMING POOL MAINTENANCE

Many landscaping activities decompose soils and increase the likelihood that earth and garden chemicals will runoff into the storm drains during irrigation or when it rains. Swimming pool water containing chlorine and copper-based algaecides should never be discharged to storm drains. These chemicals are toxic to aquatic life.

HEAVY EQUIPMENT OPERATION

BEST MANAGEMENT PRACTICES FOR THE:

- Vehicle and equipment operators
- Site supervisors
- General contractors
- Home builders
- Developers

SITE PLANNING AND PREVENTIVE VEHICLE MAINTENANCE

- Designate one area of the construction site, well away from streams or storm drain inlets, for auto and equipment parking, refueling, and routine vehicle and equipment maintenance.
- Maintain all vehicles and heavy equipment. Inspect frequently for leaks.
- Perform major maintenance, repair jobs, vehicle and equipment washing off site.
- If you must drain and replace motor oil, radiator coolant, or other fluids on site, use drip pans or drop cloths to catch drips and spills. Collect all spent fluids, store in separate containers, and recycle whenever possible.
- Do not use diesel oil to lubricate equipment or parts.
- Clean up spills immediately when they happen.
- Never hose down dirty pavement or impermeable surfaces where fluids have spilled. Use dry cleanup method (absorbent materials, cat litter, and/or rags) whenever possible. If you must use water, use just enough to keep the dust down.
- Sweep up spilled dry materials immediately. Never attempt to wash them away with water or bury them. Use as little water as possible for dust control.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- Report significant spills to the appropriate spill response agencies immediately.

STORM DRAIN POLLUTION FROM HEAVY EQUIPMENT ON THE CONSTRUCTION SITE

Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze or other fluids on the construction site are common sources of storm water pollution. Prevent spills and leaks by isolating equipment from runoff channels, and by watching for leaks and other maintenance problems. Remove construction equipment from the site as soon as possible.

PAINTING AND APPLICATION OF SOLVENTS AND ADHESIVES

BEST MANAGEMENT PRACTICES FOR THE:

- Painters
- Paperhangers
- Plasterers
- Graphic artists
- Dry wall crews
- Floor covering installers
- General contractors
- Home builders
- Developers

Keep all liquid paint products and wastes away from the gutter, street, and storm drains. Liquid residues from paints, thinners, solvents, glues and cleaning fluids are hazardous wastes. When they are thoroughly dry, empty paint cans, spent brushes, rags, and drop cloths may be disposed of as trash.

PAINT REMOVAL

- Chemical paint stripping residue is a hazardous waste.
- Chips and dust from marine paints or paints containing lead or tributyl tin are hazardous wastes. Dry sweep and dispose of appropriately.
- Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up and disposed as trash.
- When stripping or cleaning building exteriors with high-pressure water, block storm drains. Wash water onto a dirt area and spade into soil. Or, check with the local wastewater treatment authority to find out if you can collect (mop or vacum) building cleaning water and dispose to the sanitary sewer.

PAINTING CLEANUP

- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- For water based paints, paint out brushes to the extent possible, and rinse to the sanitary sewer.
- For oil based paints, paint out brushes to the extent possible, filter and reuse thinners and solvents. Dispose of excess liquids and residue as hazardous waste.

WHAT CAN YOU DO?

- Recycle/reuse leftover paints whenever possible.
- Recycle excess water-based paint, or use up. Dispose of excess liquid, including sludges, as hazardous waste.
- Reuse leftover oil-based paint. Dispose of excess liquid, including sludges, as hazardous waste.

STORM DRAIN POLLUTION FROM PAINTS, SOLVENTS, AND ADHESIVES

All paints, solvents, and adhesives contain chemicals that are harmful to the wildlife in our creeks and Bay. Toxic chemicals may come from liquid or solid products or from cleaning residues or rags. It is especially important not to clean brushes in an area where paint residue can flow to a gutter, street, or storm drain.

No.	Revision	Date	By	Chkd

Date: 07/01/03 Drawn By: Designed By:

Blueprint for a Clean Bay

BEST MANAGEMENT PRACTICES FOR THE CONSTRUCTION INDUSTRY.

SANTA CLARA VALLEY NONPOINT SOURCE POLLUTION CONTROL PROGRAM

EARTH MOVING ACTIVITIES

BEST MANAGEMENT PRACTICES FOR THE:

- Bulldozers, backhoe, and grading machine operators
- Dump truck drivers
- Site supervisors
- General contractors
- Home builders
- Developers

DURING CONSTRUCTION

- Remove existing vegetation only when absolutely necessary.
- Consider planting temporary vegetation for erosion control on slopes or where construction is not immediately planned.
- Protect downslope drainage courses, streams, and storm drains with hay bales or temporary drainage swales.
- Use check dams or ditches to divert runoff around excavations.
- Cover stockpiles and excavated soil with secured tarps or plastic sheeting.

GENERAL BUSINESS PRACTICES

- Schedule excavation and grading work for dry weather.
- Perform major equipment repairs away from the job site.
- When refueling or vehicle/equipment maintenance must be done on site, designate a location away from storm drains.
- Do not use diesel oil to lubricate equipment or parts.

DETECTING CONTAMINATED SOIL OR GROUNDWATER

As you know, contaminated groundwater is a common problem in the Santa Clara Valley. It is essential that all contractors and subcontractors involved in excavation and grading know what to look for in detecting contaminated soil or groundwater, and test ponded groundwater before pumping. See Blueprint for a Clean Bay, a construction best management practices guide available from the Santa Clara Valley Nonpoint Source Pollution Control Program, for details.

WATCH FOR ANY OF THESE CONDITIONS:

- Unusual soil conditions, discoloration, or odor
- Abandoned underground tanks
- Abandoned wells
- Buried barrels, debris, or trash

STORM DRAIN POLLUTION FROM EARTH-MOVING ACTIVITIES

Soil excavation and grading operations loosen large amounts of soil that can flow or blow into storm drains if handled improperly. Soil erodes due to a combination of decreased soil stability, increased runoff, and increased flow velocity. Some of the most effective erosion control practices reduce the amount of runoff crossing a site and slow the flow with check dams or roughened ground surfaces.

ROADWORK AND PAVING

BEST MANAGEMENT PRACTICES FOR THE:

- Road Crews
- Driveway/sidewalk/parking lot construction crews
- Seal coat contractors
- Operators of:
  grading equipment
  paving machines
  dump trucks
  concrete mixers
- Construction inspectors
- General contractors
- Developers

WHAT CAN YOU DO?

GENERAL BUSINESS PRACTICES

- Develop and implement erosion/sediment control plans for embankments.
- Schedule excavation and grading work for dry weather.
- Check for and repair leaking equipment.
- Perform major equipment repairs in designated areas at your yard, away from the construction site.
- When refueling or vehicle/equipment maintenance must be done on site, designate a location away from storm drains and creeks.
- Do not use diesel oil to lubricate equipment or parts.
- Recycle used oil, concrete, broken asphalt, etc. whenever possible.

DURING CONSTRUCTION

- Avoid paving and seal coating in wet weather, or when rain is forecast before fresh pavement will have time to cure.
- Cover and seal catch basins and manholes when applying seal coat, slurry seal, fog seal, etc.
- Use check dams, ditches, or berms to divert runoff around excavations.
- Never wash excess material from exposed aggregate concrete or similar treatments into a street or storm drain. Collect and recycle, or dispose to dirt area.
- Cover stockpiles (asphalt, sand, etc.) and other materials with plastic tarps. Protect from rainfall and prevent runoff with temporary roofs or plastic sheets and berms.
- Catch drips from paver with drip pans or absorbent material (cloth, rags, etc.) placed under machine when not in use.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags), or dig up and remove contaminated soil.
- Collect and recycle or appropriately dispose of excess abrasive gravel or sand.
- Avoid over application by water trucks for dust control.

ASPHALT/CONCRETE REMOVAL

- Avoid creating excess dust when breaking asphalt or concrete.
- After breaking old pavement, be sure to remove all chunks and pieces.
- Make sure broken pavement does not come in contact with rainfall or runoff.
- Shovel or vacuum saw-cut slurry and remove from the site. Cover or barricade storm drain during saw-cutting if necessary.
- Never hose down streets to clean up tracked dirt.

STORM DRAIN POLLUTION FROM ROADWORK

Road paving, surfacing, and pavement removal happen right in the street, where there are numerous opportunities for storm drain contamination by asphalt, saw-cut slurry, or excavated material. Extra planning is required to store and dispose of materials properly and guard against pollution of storm drains and creeks.

GENERAL CONSTRUCTION AND SITE SUPERVISION

BEST MANAGEMENT PRACTICES FOR THE:

- Construction industry

WHAT CAN YOU DO?

- Designate one area of the site for auto parking, vehicle refueling, and routine equipment maintenance. The designated area should be well away from streams or storm drain inlets, and bermed if necessary. Make major repairs off site.
- Keep materials out of the rain-prevent runoff contamination at the source. Cover exposed piles of soil of construction materials with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.
- Keep pollutants off exposed surfaces. Place trash cans and recycling receptacles around the site to minimize litter.
- Clean up leaks, drips, and other spills immediately so they do not contaminate soil or groundwater or leave residue on paved surfaces.
- Never hose down "dirty" pavement or surfaces where materials have spilled. Use dry cleanup methods whenever possible. If you must use water, use just enough to keep the dust down.
- Cover and maintain dumpsters. Check frequently for leaks. Place dumpsters under roofs or cover with tarps or plastic sheeting secured around the outside of the dumpster. Never clean a dumpster by hosing it down on the construction site.
- Make sure portable toilets are in good working order. Check frequently for leaks.

MATERIALS/WASTE/HANDLING

- Practice Source Reduction-minimize waste when you order materials. Order only the amount you need to finish the job.
- Use recyclable materials whenever possible.
- Dispose of all wastes properly. Many construction materials and wastes, including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and cleared vegetation can be recycled. (See the references list of recyclers at the back of Blueprint for a Clean Bay). Materials that cannot be recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never bury waste materials or leave them in the street or near a creek or stream bed.

STORM DRAIN POLLUTION FROM CONSTRUCTION ACTIVITIES

Construction sites are common sources of storm water pollution. Materials and wastes that blow or wash into a storm drain, gutter or street have a direct impact on local creeks and the Bay. As a contractor, site supervisor, owner or operator of a site, you may be responsible for any environmental damage caused by your subcontractors or employees.

BEST MANAGEMENT PRACTICES FOR STORM WATER POLLUTION PREVENTION

In the Santa Clara Valley, storm drains flow directly to local creeks and San Francisco Bay, with no treatment. Storm water pollution is a serious problem for wildlife dependent on our waterways and for the people who live near polluted streams or baylands. Some common sources of this pollution include spilled oil, fuel, and fluids from vehicles and heavy equipment; construction debris; landscaping runoff containing pesticides or weed killers; and materials such as used motor oil, antifreeze, and paint products that people pour or spill into a street or storm drain.

Thirteen valley cities have joined together with Santa Clara County and the Santa Clara Valley Water District to educate local residents and businesses and fight storm drain pollution.

Note: The property owner and the contractor share ultimate responsibility for the activities that occure on a construction site. Owner and contractor may be held responsible for any environmental damage caused by the subcontractors or employees.

Spill Response Agencies

1. Dial 911
2. Santa Clara Valley Water District Environmental Compliance Division (408) 927-0710.
3. Governor's Office of Emergency Services Warning Center (800) 852-7550 (24 hours).

Local Pollution Control Agencies

Santa Clara County Office of Toxics and Solid Waste Management
(408) 441-1195

Santa Clara Valley Water District
(408) 927-0710

San Jose/Santa Clara Water Pollution Control Plant
(408) 945-5300
Serving Campbell, Cupertino, Los Gatos, Milpitas, Monte Sereno, San Jose, Santa Clara and Saratoga

Sunnyvale Water Pollution Control Plant
(408) 730-7270

Palo Alto Regional Water Quality Control Plant
(415) 329-2598
Serving East Palo Alto, Los Altos, Los Altos Hills, Montain View, Palo Alto, and Stanford

ORDINANCE OF THE CITY OF CAMPBELL ESTABLISHING REQUIREMENTS FOR STORM WATER POLLUTION CONTROL

A. **Criminal Penalties.** Any person who violates any provision of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punishable by imprisonment for a term not to exceed six (6) months or by a fine not to exceed $1000 or by both. Each and every violation of this chapter shall constitute a separate offense. Every day each such violation continues shall be an additional offense.

B. **Civil Penalties.** Any person who violates any provision of this chapter shall be civilly liable to the City of Campbell in a sum not to exceed $1000 per day for each day in which the violation occurs. Each and every violation of this chapter shall constitute a separate offense. Every day each such violation continues shall be an additional offense.

C. **Civil Liability.** Any person who violates any provision of this chapter shall be civilly liable to the City of Campbell for all costs, including attorneys fees, associated with the investigation and remediation of environmental conditions caused by the discharge of pollutants into the Municipal Storm Drain System or a Watercourse in violation of this chapter.

D. **Remedies Cumulative.** The remedies provided for in this chapter are cumulative and not exclusive and shall be in addition to any and all other remedies available to the City of Campbell under State and Federal Law.

PLAN FOR THE IMPROVEMENT OF

BLUEPRINT FOR A CLEAN BAY

ENCROACHMENT PERMIT NO.

CITY OF CAMPBELL · THE ORCHARD CITY ·

SCALE: N.T.S.

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